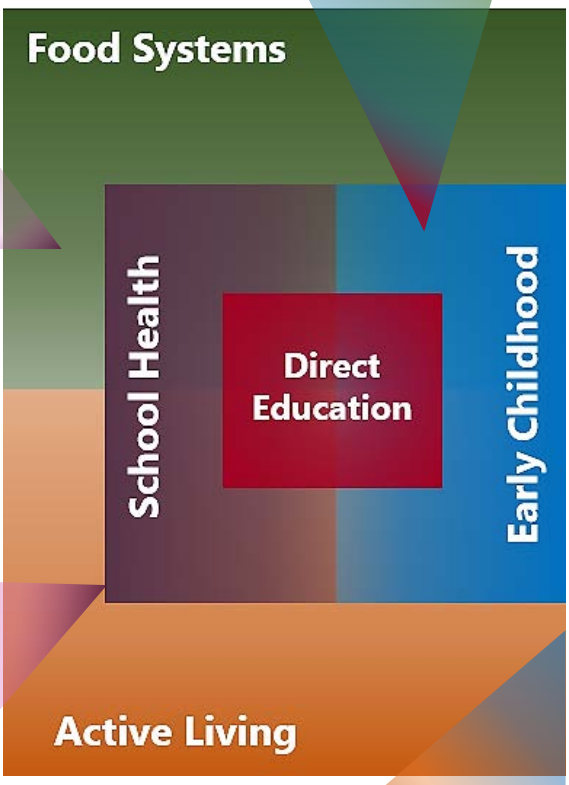
AZ Health Zone

FFY17 Annual Evaluation Report

January 2018



COLLEGE OF AGRICULTURE & LIFE SCIENCES
Nutritional Sciences
SNAP-Ed Evaluation Team

AZ HEALTH ZONE

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FFY17 Annual Evaluation Report

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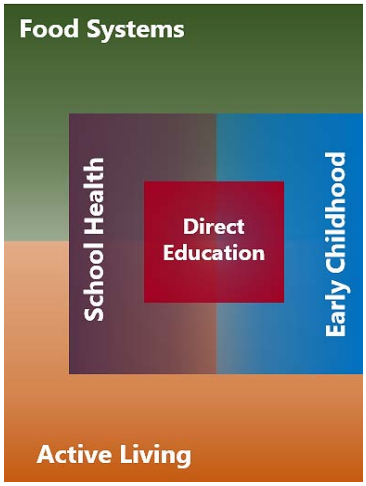
This report was funded by the AZ Health Zone Supplemental Nutrition Assistance Program – Education (SNAP-Ed) and approved by the Arizona Department of Health Services (ADHS) Human Subjects Review Board (#16-0018). The information and recommendations included herein are those of the authors and should not be construed as the official position of the ADHS. Quotes have been de-identified and may have been edited for clarity. This report was prepared by the AZ Health Zone State Evaluation Team, operating out of the University of Arizona Department of Nutritional Sciences:



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Executive Summary

The United States Department of Agriculture (USDA) Supplemental Nutrition Assistance Program-Education (SNAP-Ed) provides nutrition education and obesity prevention programming with the goal of increasing the likelihood that SNAP-eligible families will choose healthful diet and physical activity behaviors on a limited budget. Through the Arizona Department of Health Services (ADHS), the Arizona SNAP-Ed program, called the AZ Health Zone, coordinates initiatives with state-level partners and eight local implementing agencies (LIAs) to encourage increased fruit and vegetable consumption, regular physical activity, and caloric balance throughout the life cycle. This report describes evaluation findings from the second year of the AZ Health Zone's current three-year program cycle.

Food Systems. Progress was evident in ***healthy retail***, where baseline assessments indicated that healthy purchase supports were limited in 18 partner stores, although the mean scores for *Beverages and Frozen Foods* (40%), as well as *Food Program Supports* (54%) were comparatively stronger. SNAP-Ed ***gardening*** efforts benefited from strong champions, sustainability supports, and new cross-sector partnerships. Continued barriers included lack of staff capacity, environmental challenges in the gardens, and inconsistent sustainability. ***Farm to Institution*** efforts progressed into meaningful collaborations, implementation, and the achievement of new supports for several LIAs in FFY17, including garden- or farmer- supplied procurement at two schools. Supports for the ***Summer Food Service Program*** grew substantially, with a notable increase in SNAP-Ed supported kick-off promotional events and direct education (DE) during meal times. LIAs in several counties have successfully implemented new policy, systems, and environment (PSE) supports with their ***farmers' market*** partners, including starting a new market as well as new payment or purchase incentive programs.

Active Living. LIAs implemented more ***active living policy*** activities at both site- and community- levels in FFY17, including reviewing community-level general plans and

developing technical assistance resources for partners. LIAs completed 71 baseline assessments of ***physical activity (PA) resources*** in their communities, with large parks being the most common type of resource assessed. Results indicated that amenities and features increased with the size of the PA resource, whereas negative characteristics (litter, graffiti) were most common at sports facilities. LIAs also expanded their ***family-friendly PA*** offerings in FFY17 and demonstrated more involvement in the planning process for these events at both the citywide and site levels.

School Health. In FFY17, LIAs completed the National Healthy Schools Award Checklist (NHSAC) with participating schools in order to assess ***Local Wellness Policy implementation.*** The highest mean scores (N=102) were found for the *Nutrition Services* and *School Health and Safety Policies and Environment* sections (63%), and the lowest mean score was found for the *Health Promotion for Staff* section (45%). While SNAP-Ed-participating schools in Arizona are generally able to implement PSEs related to nutrition services, they often struggle to implement PSEs related to the ***Comprehensive School Physical Activity Program*** and Health Promotion for School Staff.

Early Childhood. LIAs are building upon Early Childhood (EC) PSE initiatives by leveraging established relationships, expanding successful programs, making more frequent contact, and combining other focus areas with EC efforts. In addition, higher ratios of meetings and trainings per unique child care center suggested a greater intensity of reach in FFY17. State and local ***collaboration with Empower*** was broadly successful, and LIAs benefitted from the continued coordination between the AZ Health Zone and the Empower program.

Direct Education. ***Adults*** reached (N=184) by an evaluated SNAP-Ed lesson series showed more improvement in food behaviors than PA behaviors, in contrast to FFY16, when PA improved more. More participants met the Dietary Guidelines for Americans' recommendations for fruit than for vegetables. ***Youth*** who participated (N=563) in evaluated lesson series reported some knowledge gains but little behavior change beyond healthier milk intake. These findings were similar to the FFY16 outcomes.

Recommendations based on the FFY17 findings include:

- Continued training and technical assistance for LIAs to build capacity for supporting progress towards ***stronger PSE changes***
- Enhancement of LIA participation in relevant PSE ***cross-sector partnerships*** to increase momentum for community-level changes
- Continued integration of DE with PSE efforts as ***multi-level interventions*** to strengthen the likelihood of impacting healthy behaviors
- Ongoing and enhanced ***collaboration with state-level partners*** implementing interrelated efforts, including the Special Program for Women, Infants, and Children, the Department of Economic Security, and the Arizona Department of Education

The FFY18 SNAP-Ed evaluation will report on the first wave of two-year outcomes related to statewide SNAP-Ed program interventions at the individual-, site- and community-levels. This data will inform the AZ Health Zone's long-term goals of reducing rates of overweight and obesity, and supporting the health of all Arizonans.

Introduction

The United States Department of Agriculture (USDA) Supplemental Nutrition Assistance Program (SNAP) supports the country's social safety net by providing food assistance funds to low-income individuals and families who qualify. The SNAP Education (SNAP-Ed) program is a potent supplement to SNAP by providing community-based nutrition education and obesity prevention initiatives in each state. The primary goal of the program is to reduce health disparities by increasing the likelihood that SNAP-eligible families will choose healthful diet and physical activity behaviors on a limited budget.[1]

Through the Arizona Department of Health Services (ADHS), the Arizona SNAP-Ed program, recently rebranded as the AZ Health Zone, coordinates initiatives with state-level partners and eight local implementing agencies (LIAs) to encourage behavioral outcomes, including increased fruit and vegetable consumption, regular physical activity, and caloric balance throughout the life cycle.

SNAP-Ed's program design centers upon an evidence-based systems approach, or Public Health Approach (PHA). The PHA is embodied by Dahlberg and Krug's Socio-Ecological Model (SEM), a framework illustrating the factors which influence individual and community health.[2] According to the SEM, individual behavior, and thus individual health, is shaped by concentric spheres of interpersonal and environmental influence. Broader levels reflect areas for policy, systems and environment (PSE) interventions, while interpersonal and individual levels are where direct education (DE) occurs. Behavior change at the individual level becomes more feasible and sustainable as barriers are reduced or removed at other levels. Figure I-1 illustrates how the SEM can be applied to obesity prevention.

Evidence abounds for the cumulative effects of multi-level interventions in obesity prevention.[3-8] The Institute of Medicine (IOM) has performed a comprehensive review of the obesity epidemic in the United States and determined that "a systems approach must be taken when formulating obesity prevention recommendations so as to address the problem from all possible dimensions."[9] Moreover, the IOM includes an examination

of income, age, and racial and ethnic disparities and highlights the imperative of programming specific to low-income, minority populations and youth, all of which are characteristic of the SNAP-Ed target audience.

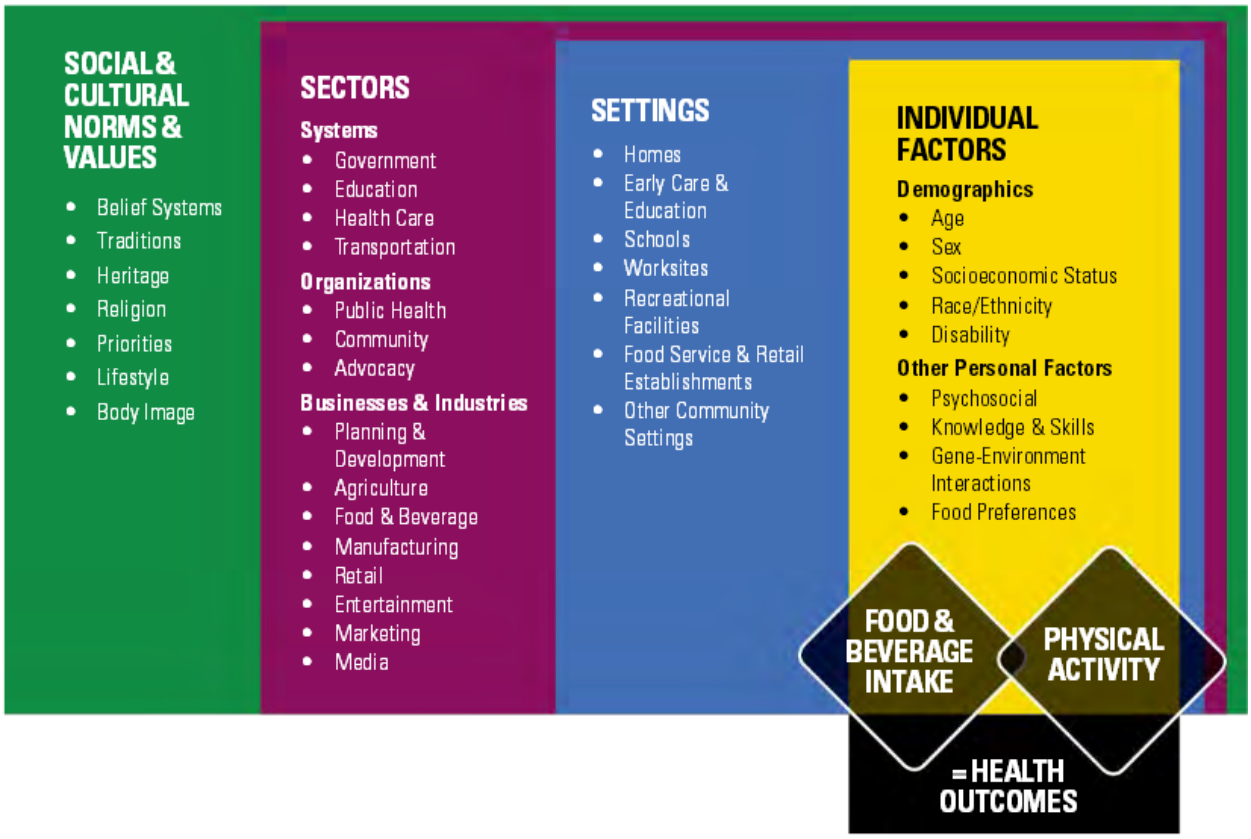


Figure I-1. The Socio-Ecological Model Applied to Obesity Prevention[2]

In Arizona, SNAP-Ed operates out of the Department of Economic Security and Bureau for Nutrition and Physical Activity within ADHS by coordinating with state partners and local implementing agencies (LIAs) to make progress using PHAs in achieving the following behavioral outcomes with SNAP-Ed eligible audiences:

- Make half your plate fruits and vegetables, at least half your grains whole grains, and switch to fat-free or low-fat milk and milk products
- Increase physical activity and reduce time spent in sedentary behaviors as part of a healthy lifestyle

- Maintain appropriate calorie balance during each stage of life—childhood, adolescence, adulthood, pregnancy and breastfeeding, and older age

To that end, SNAP-Ed implements integrated DE, PSE, and social marketing efforts in each of Arizona's 15 counties. The program's key objectives for federal fiscal years 2016-2018 (FFY16-18) include the following strategies in five priority focus areas:

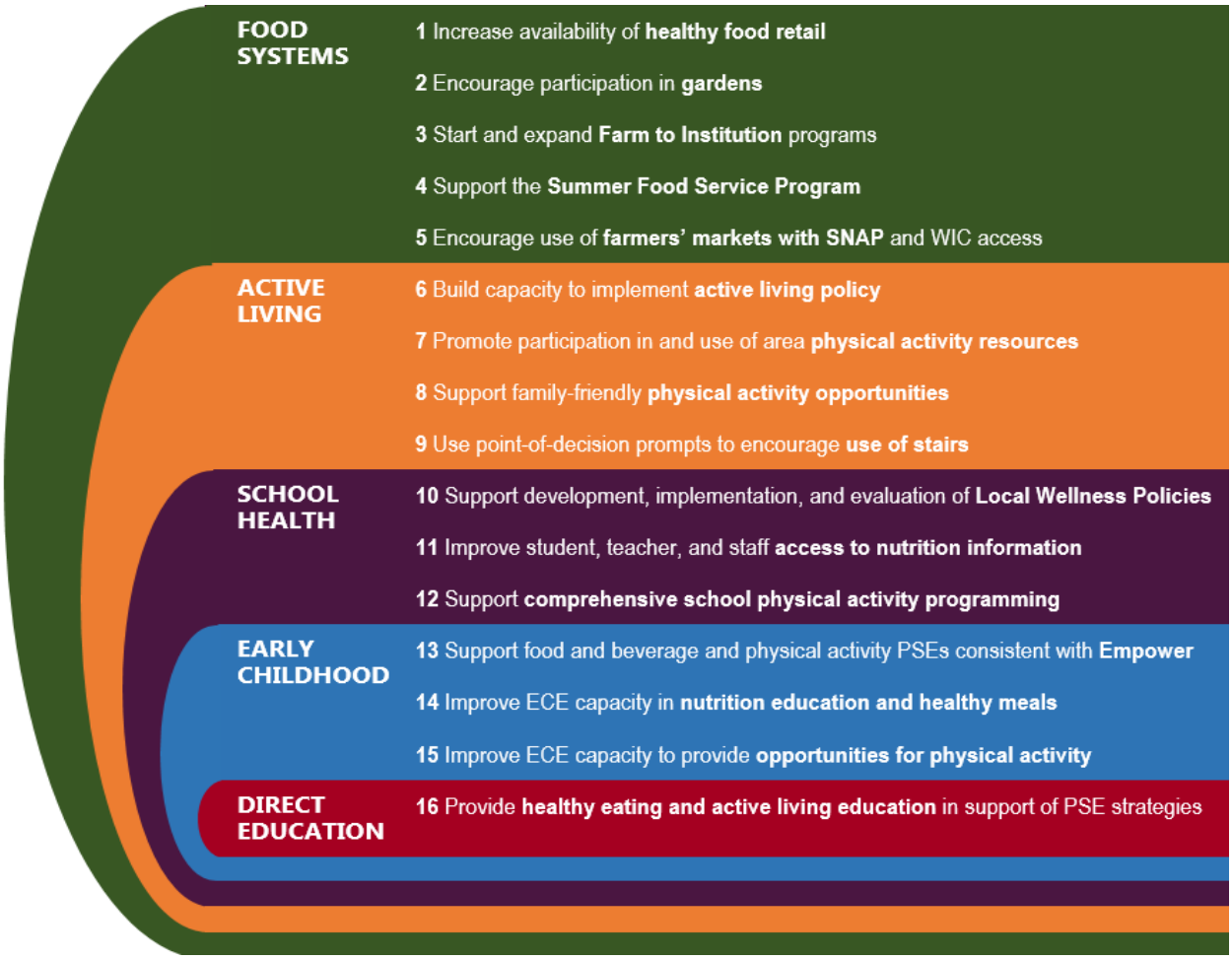
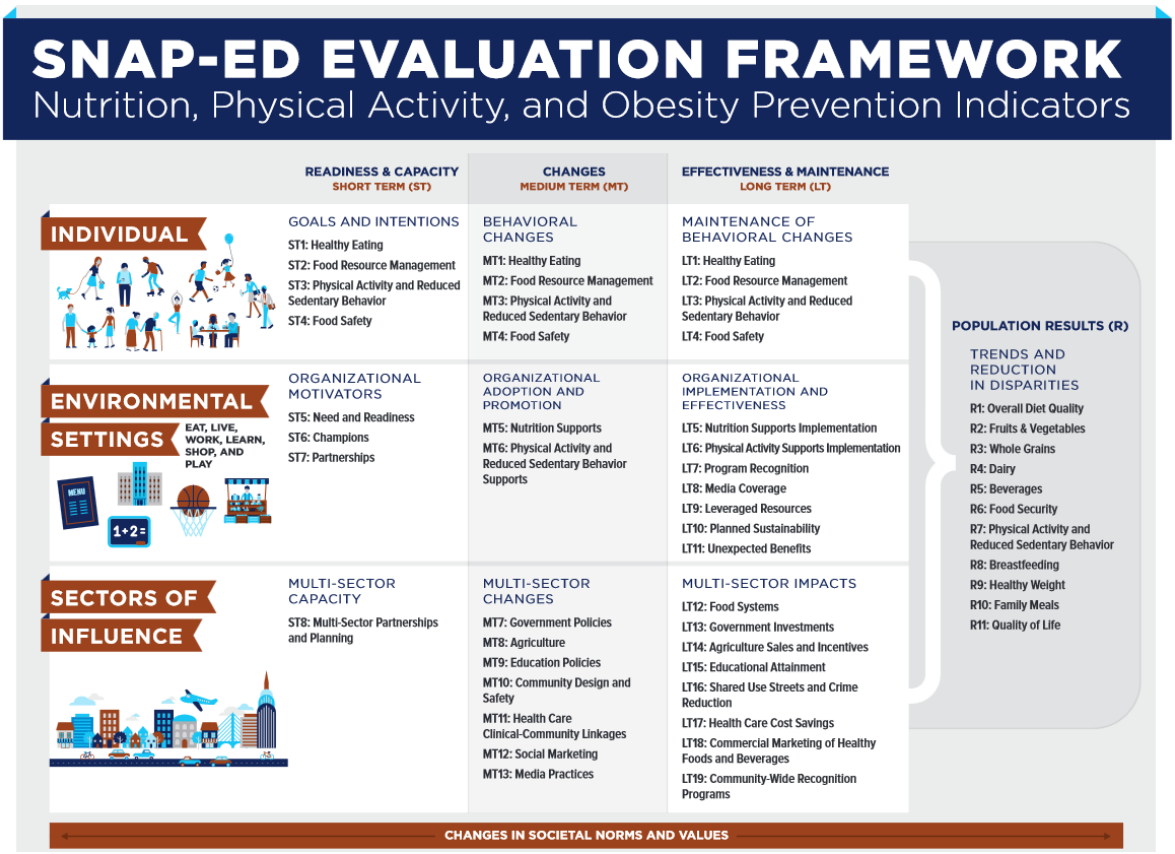


Figure I-2. The AZ Health Zone's Key Objectives, by Focus Area

Eight LIAs were funded statewide to conduct SNAP-Ed's local programming during the three-year program cycle: the University of Arizona Cooperative Extension (UA Extension), and seven county health departments. An external state-level evaluation team (SET) from the University of Arizona, Department of Nutritional Sciences performs process, outcome, and impact evaluations for LIAs' integrated PSE and DE efforts and in alignment with the USDA's SNAP-Ed Evaluation Framework below.[10]

Figure I-3. The National SNAP-Ed Evaluation Framework



This report explicates the evaluation findings from year two of the three-year program cycle in all PSE focus areas as well as DE behavioral outcomes for youth and adults. The following ***priority indicators*** from the SNAP-Ed Evaluation Framework highlighted in grey throughout the report:

- ST7 - Organizational Partnerships
- ST8 – Multi-level Partnerships and Planning
- MT1 - Healthy Eating
- MT2 - Food Resource Management
- MT3 - Physical Activity and Reduced Sedentary Behavior
- MT5 - Nutrition Supports

In alignment with Arizona's SNAP-Ed Evaluation Framework, additional outcome indicators are reported by work plan strategy and summarized in Appendix B.

While this report is presented *by focus area*, which emphasizes progress in each topical PSE area, representative examples are included within each chapter of how LIAs across Arizona are ***linking their DE to PSE work as multi-level interventions*** in order to enhance the impact of their interventions. We also present two evaluation ***deep dives***, which detail our approaches and results from "evaluating the evaluations" of school health and youth DE efforts.

This report is dedicated to Arizona's LIA staff who endeavor to implement best practices in every county, and to the SNAP-Ed eligible families and communities who inspire us keep striving to ensure optimal health and wellness for all Arizonans.

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Food Systems

Background

AZ Health Zone's Food Systems strategies address two persistent and inter-related health issues: food insecurity and obesity.[1] Eighteen percent of adults and 25% of children in Arizona live in poverty,[2] and stubbornly high adult overweight (34%) and obesity (29%) rates[3] continue to impact Arizona families and communities due to obesity-related chronic diseases such as diabetes and hypertension. A key component in supporting healthy, hunger-free families is regular consumption of the foods necessary for good health. However, in this largely rural state, a multitude of food deserts exist where residents lack sufficient access to the foods recommended by MyPlate.[4] The community assets necessary to address low food access include a multitude of grocery and small stores with healthy options that also accept SNAP and WIC, summer meal programs for children, healthful emergency food options, affordable farmers' markets, locally-grown procurement at schools and other institutions, and abundant, accessible gardens. Shopping and eating healthy on a budget is one of the key messages promoted by SNAP-Ed, and in order to do so, healthier foods must be accessible, affordable, and appealing through each of these channels and beyond.[5]

The AZ Health Zone is responding through evidence-based coordinated approaches in local communities. AZ Health Zone's food systems initiatives emphasize key policy, systems, and environment (PSE) approaches that integrate local agriculture, food retail, schools, feeding programs, gardens, and coalitions to promote healthy eating and improve food security. These activities complement direct education (DE) efforts by increasing the likelihood that individuals who receive SNAP-Ed educational lessons and messages will also have the access, skills, and resources necessary to consume a variety of appealing and affordable foods encouraged by MyPlate.

The Food Systems initiatives implemented by Arizona SNAP-Ed Local Implementing Agencies (LIAs) include:

- **Healthy Food Retail** in locations such as grocery stores, small stores, and farmers' markets. Key efforts in this area include: 1) enhancing the appeal, availability, and/or promotion of healthier food items offered by retailers; 2) increasing the number of retailers that accept SNAP; and 3) cultivating new growers and locally-sourced produce.
- **Gardens,** including those that reach individuals and families in their homes, communities, schools, and child care sites. Gardening opportunities provide participants with the skills and resources to harvest their own produce and learn where food comes from, while encouraging physical activity and enhancing the communities' surroundings. They may also provide opportunities for new community partnerships that can realize additional PSE initiatives.
- **Farm to Institution** programs increase the locally-produced foods served at schools, child care sites, and other community settings, while also providing expanded markets for local growers. Arizona's SNAP-Ed efforts include partnerships to expand the procurement of local ingredients for food service, certifying school gardens for on-site consumption,[6] and integration with complementary nutrition education.
- The **Summer Food Service Program** (SFSP) provides free, federally-funded nutritious meals through the Arizona Department of Education (ADE) for low-income children at community sites each summer. SNAP-Ed's food security emphasis supports the SFSP by encouraging families to participate in meals and providing family-friendly activities during meal hours, participating in kick-off events, and promoting meal sites.
- Encouraging **Farmers' Markets with SNAP**, including supporting the establishment of new farmers' markets in SNAP-Ed eligible communities. Complementary SNAP-Ed efforts seek to encourage new and existing markets to become certified to accept SNAP and other food programs, and boosting market turnout by eligible families.

In year two of SNAP-Ed's multi-year program cycle, **gardens** were notably mature as a PSE intervention, while **farm to institution** programs remained nascent. Support for the **SFSP** gained momentum in FFY17 as LIAs gained greater understanding and confidence to implement their programming efforts. The two remaining Food Systems strategies – **healthy retail** and **farmers' markets with SNAP** – saw positive progress towards local

and state-level goals, primarily through partnerships with local retailers and market managers, participation in coalitional efforts, and partnership with the Double Up Food Bucks program. Below, Food Systems short-term (ST5, ST6, ST7, ST8) and medium-term (MT5) outcomes in FFY17 are reported in alignment with the National SNAP-Ed Evaluation Framework.[7]

Healthy Food Retail

Methods

Quantitative. The Store Opportunities in the Retail Environment (STORE) tool was developed by the AZ Health Zone State Evaluation Team (SET) to assess the baseline ***availability, appeal***, and ***promotion*** of healthier foods at stores with which LIAs partnered (MT5).

Data Collection. All LIAs in the healthy retail strategy completed assessment modules with their store partners related to the inventory of fresh produce, healthier canned foods, dry goods (grains and beans), healthier snacks, beverages and frozen produce, the proportion of healthier to less healthy advertisements (e.g. whole versus low and fat free milk), and the presence of Electronic Benefit Transfer (EBT) programs (SNAP and WIC). There was also a module for large stores only, which captured additional supports for fresh produce in the larger retail environment.

Small stores were those with two checkout registers or fewer, including convenience, corner, and global specialty markets. A store with three or more registers was categorized as a large store, including grocery stores, supermarkets, and supercenters.

Assessment Tool. The STORE development process was iterative and included the following steps in Figure FS-1:

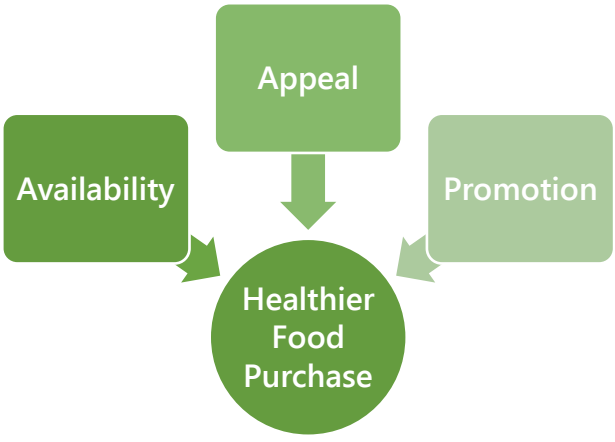
Figure FS-1. The STORE Tool Development Process

Research *(Jun-Aug 2016)*	Development *(Sep-Nov 2016)*	Pilot *(Dec 2016-Feb 2017)*	Implementation *(Mar-Sep 2017)*
• Review of the healthy retail assessment literature in search of existing low-burden tools to capture interventions that align with the Arizona SNAP-Ed intervention model.	• Development of the draft STORE tool, which was adapted from the Shop Healthy Initiative's in-store assessment tool.[8]	• Stakeholder review of the tool for usability and content validity. • Pilot of the tool with four stores in Arizona. • Revision of the tool to incorporate feedback.	• LIA training on the STORE tool. • LIAs working in the Healthy Retail strategy implemented the assessment with small and large retail store partners.

The STORE tool collected the following information about the stores where LIAs engaged in healthy retail work:

- ***Availability*** measures whether food items aligned with the MyPlate guidelines are in stock, such as produce, low-fat milk, and healthier snacks.
- ***Appeal*** refers to how the item is positioned within the store to encourage purchase, such as whether fresh produce is placed at the checkout counter.
- ***Promotion*** measures the extent to which marketing materials such as shelf talkers, posters, and recipes are placed near healthier food items to encourage their purchase.

Figure FS-2. Encouraging Healthier Purchases



While each of these intervention components on their own can have a positive effect on purchasing, research suggests that it is the *combination of multiple approaches* in the store environment that are likely to have a

stronger impact on shoppers' purchasing decisions.[9] For this reason, the STORE tool measures all three (Figure FS-2).

Data Analysis. The assessment responses were tallied into total and by-section numerical scores. The following three interventions were weighted in the scoring as particularly strong motivators for healthier purchases:

- The availability of ***healthier items (e.g. fresh produce).*** The healthier item must first be in stock in order to be positioned and promoted to encourage purchase.
- The appeal of ***produce placement at the checkout counter or front entrance,*** which are two locations where all shoppers visit.
- The availability of WIC and SNAP ***redemption programs*** at the store, which may increase the likelihood that SNAP-Ed's target population will patronize the store.

Because each section of the STORE tool varies in length, and maximum point assignments depend upon the number and category of questions therein, point scores were standardized by converting into percentages (points scored/maximum achievable points) for all modules except Advertising. Advertising scores were calculated by comparing the proportion of less healthy advertisements posted inside and outside the store to their healthier counterparts, such as advertisements for sugar-sweetened beverages versus low sugar drinks and water.

Qualitative Analysis. To further understand store owner readiness to engage in healthy retail efforts (ST5) and the settings-level partnerships (ST7) that LIAs developed with them, a qualitative inquiry was conducted. The SET used NVivo v11.0 for coding and theme analysis of narrative data pertaining to LIAs' FY17 work described in their Semi-Annual Report Narratives (SARNs). Additional quantitative data from Semi-Annual Report Tables (SARTs) were analyzed to assess LIAs' progress toward achieving their healthy retail goals.

Results

Quantitative. Five LIAs in five counties completed 18 STORE assessments to measure the baseline healthy retail supports in the stores with which they partnered. Tables FS-1 and FS-2 describe the findings by store size and food categories:

Table FS-1. STORE Scores[a] for a Large Store, by County (N=1)

COUNTY	Fresh Produce	Canned	Whole Grains & Beans	Snacks	Beverages & Frozen	Food Programs	Fresh Produce: Supermarket	Total (All Sections)
Coconino	63	44	70	40	85	100	20	**61**

[a] Scores reflect the percentage of maximum possible points in each category.

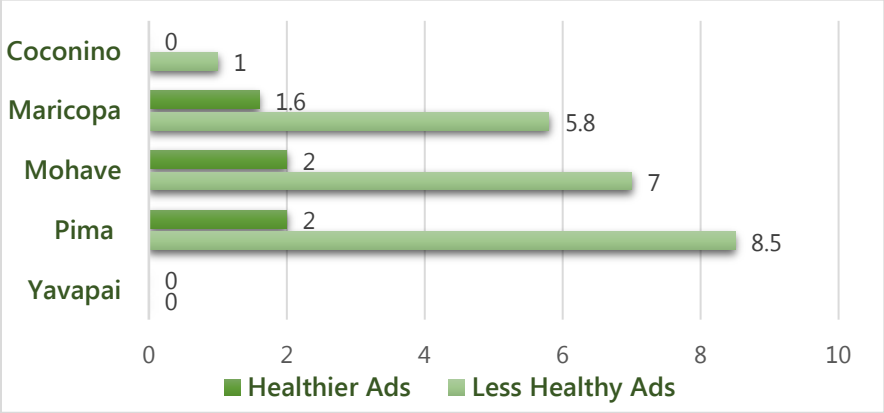
Table FS-2. FFY17 Mean STORE Scores[a] for Small Stores, by County (N=17)

COUNTY	No. Completed	Fresh Produce	Canned	Whole Grains & Beans	Snacks	Beverages & Frozen	Food Programs	Total (All Sections)
Maricopa	5	39	12	42	24	57	72	**44**
Mohave	1	33	11	0	10	23	40	**25**
Pima	6	34	15	25	38	42	67	**40**
Yavapai	5	19	0	8	8	25	24	**16**
All Counties	**17**	**31**	**10**	**24**	**24**	**40**	**54**	**33**

[a] Scores reflect the percentage of maximum possible points in each category.

Advertising is presented in Figure FS-3. Scores reflected the proportion of less healthy food advertisements posted at the store as compared to healthier ones.

Figure FS-3. FFY17 Mean[a] Number of Healthier Versus Less Healthy Advertisements [b] in Assessed Stores, by County (N=18)



[a] N=1 in Coconino and Mohave Counties. [b] Sum of advertisements posted inside and outside the store.

Nutrition Supports (MT5). Comparatively speaking, scores in small stores were strongest for the Beverages and Frozen section (40%), as well as Food Programs (54%). However, even these scores fell far short of the maximum possible. Canned Foods (10%), Whole Grains & Beans (24%), and Snacks (24%) were the weakest categories across small stores. Advertising scores indicate that there were typically 100-425% more advertisements for less healthy foods compared with healthier ones. In the one supermarket evaluated, the fresh produce characteristics expected in a small store scored relatively well (63%). However, in the supermarket-specific Fresh Produce module, which includes features like healthy end-cap displays and recipe kits, this store's score (20%) reflected much room for improvement.

Considering that FFY17 was a baseline assessment year for nutrition supports present in SNAP-Ed partnering stores, lower scores are to be expected, and suggest that LIAs have selected stores in strong need of healthy retail supports. However, these scores more generally suggest that retail supports in a small sample of SNAP-Ed communities are

indeed lacking in the presence and magnitude necessary to encourage purchasing behaviors in alignment with the MyPlate guidelines.

STORE assessment scores in rural counties were generally lower than in the urban ones (Maricopa and Pima). This suggests that the broader challenges in rural areas to supporting healthy food access are also reflective of the specific stores selected by LIAs for SNAP-Ed intervention. It may also be symptomatic of greater challenges in rural areas to gain access to regular inventories of fresh produce, which was a priority intervention measured by the STORE.

Another way to consider the results is to view the findings by intervention type (Figure FS-4) rather than according to where in the store the support was measured. This can be helpful in exploring the relative balance of each type of healthy retail support. ***Availability*** is vital because the healthier item must be present in the store to be purchased – without it, neither appeal nor promotional supports can be implemented. Enhancing the ***appeal*** of certain items by adjusting their placement within the store is another recommended approach to encourage the purchase of healthier items.[10] The ***promotion*** of healthy items, while also important, may be more likely to encourage purchase when paired with the other supports. On their own, however, promotional materials may be only a drop in the bucket of advertisements and that consumers are exposed to while shopping.

Figure FS-4. FFY17 Mean Small Retailer STORE Scores, by Intervention Type (N=17)

In FFY17, availability and appeal supports scored higher than promotion, but as with the previous analysis, were low in all categories relative to the maximum possible scores.

Overall, the baseline results suggest that LIAs have successfully identified and engaged with stores that are in need of healthy retail supports. The fact that scores were relatively low across all counties in all store categories provides a panoply of possible interventions to implement. Because there is room to improve across all categories, LIAs may find greater flexibility in working with storeowners to select interventions that also reflect their needs and desires.

A Healthy Retail storeowner in Maricopa County.

The purpose for the STORE in FFY17 was to measure the baseline supports for healthy retail in stores with which LIAs were partnering. In FFY19, the STORE will be implemented again to document any enhancements to these retail environments as a result of SNAP-Ed interventions via changes in the availability, appeal, and/or promotion supports that the tool measures. By also analyzing the data by intervention type across time, it may be possible to understand the relative balance of different types of interventions that LIAs have implemented with their store partners.

Qualitative. Assessing and strengthening the readiness (ST5) of store partners to engage in healthy retail was a strong carry-over theme from FFY16. This work to prepare for implementing new supports included LIA staff capacity-building to better understand the local community's needs related to store offerings, internal evaluations with customers, support for new farmers, and the development of stronger relationships with store owners and managers. The degree to which healthy retail supports themselves were implemented in stores in FFY17 (beyond the completion of baseline assessments) varied widely by LIA. However, compared with FFY16, more partnerships had been initiated (ST7): 18 this year compared with five in the prior year. The FFY17 healthy retail key accomplishments are summarized in Table FS-3.

Table FS-3. Characteristics of Store-based Initiatives in FFY17, by County

COUNTY	Retailer Type (s)	No. of Store Partners	FFY17 Interventions
Coconino	Grocery	1	• Maintained collaborative relationships with store management and Navajo Nation partners.
Maricopa	Convenience	5	• Relationships of depth developed with store owners. • In-store interventions implemented addressing the appeal and promotion of healthier items. • Kick-off and customer engagement event at one store.
Navajo & Apache	Grocery	2	• Initiated DE and retailer partnerships at two stores.
Mohave	Convenience	1	• Engaged in conversations with one store to encourage enrollment in WIC redemption.
Pima	Convenience (2), Global Specialty Market (3)	6	• Conducted six manager and 60 customer interviews at participating partner stores to inform healthy retail interventions. • Collaborated with university student group to develop a toolkit of store enhancements to share with managers.
Yavapai	Convenience (1), General (1), Specialty (1)	3	• Collaborated with the Health in Arizona Policies program to conduct on-site internal assessments and interviews with three small retailers, resulting in individualized feedback and recommendations.

In addition, two LIAs worked on supply-side healthy retail efforts in alignment with their Farm to Institution work, to develop more growers and supply chain partners to sell locally-sourced produce at small retailers as well as farm stands and farmers' markets.

> "Our support includes working with individuals and groups to obtain the Good Agricultural Practices (GAP) certification, forming a farming cooperative, and providing technical assistance with resources, trainings, and materials…[Our] Food Access coordinator also supported the planning, implementation, promotion and launch of the Spaces of Opportunity Farm Stand and Community Supported Agriculture (CSA). Currently nine CSAs are being distributed with twenty-two individuals stopping by each Saturday at the farm stand."

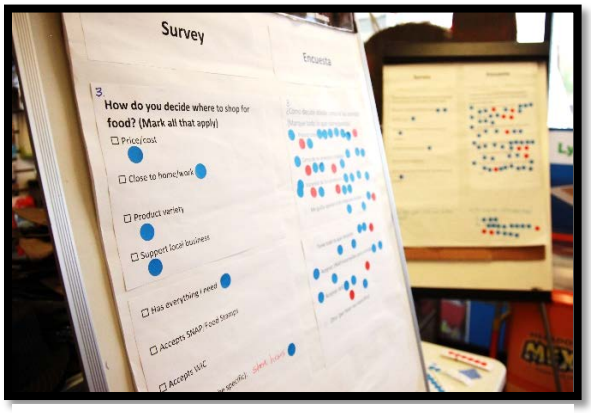
This work also connects with efforts in the Farmers' Market strategy to bolster the produce supply in local communities' food sheds, where gaps in grower capacity can challenge SNAP-Ed success within both strategies.

Multi-level Intervention Highlights

Collaborative Relationships Lead to New Healthy Retail Supports in Maricopa. The Maricopa County Department of Public Health (MCDPH) has continued to build upon their FFY16 efforts to implement healthy retail in areas of Phoenix that have low access to healthy food. The SNAP-Ed team's approach includes: 1) formative work in target neighborhoods to identify high priority small stores, 2) building relationships by learning the owners' stories and their desires for their stores, and 3) implementing a combination of PSE and DE supports that benefit both the store and local residents.

One such success in FFY17 involved Genesis Market, a family owned store in Sunnyslope. As a center of influence in the Guatemalan community, Genesis Market recognizes their opportunity to promote well-being through healthy retail initiatives. After interviewing the owners and learning their wants and needs for the market, the MCDPH SNAP-Ed team collaborated with internal and external partners, including the University of Arizona College of Public Health, Desert Mission Food Bank, and Creciendos Unidos to develop an in-store community health and cultural event.

Local community members were invited to visit the store and provide feedback using a series of dot surveys about integrating healthy food options into the inventory.



Dot surveys at the Genesis Market.

Materials distributed at the in-store community event.

Other in-store activities for the 30 customers who attended included nutrition education, healthy food tastings, and health screenings. The storeowners were integral to the promotion and success of the event due to their strong commitment and direct interaction with the community. After the event, healthier purchase prompts and supports were successfully implemented in the store—which was only one component of a multi-faceted approach.

"The event led to expanded outreach within the community and deepened the relationship between MCDPH, Desert Mission, and Genesis Market. Since the event, MCDPH has worked with the market managers to provide support and technical assistance. This includes two displays that will be used to highlight fresh fruits and vegetables and healthy snacks near the front register, a 'literature holder' that will display healthy recipes and nutrition education handouts, and a write-on board to highlight healthy items and community events."

This success story also illustrates the leveraging of resources among collaborative partners in order to offer the neighborhood an in-store event with many added-value elements for all involved. This combination of PSE and educational supports within the store highlights the value of meaningfully engaging storeowners as well as integrating feedback from residents as a component of SNAP-Ed efforts, which allowed the LIA to incorporate key stakeholder perspectives into their interventions and therefore increase the likelihood of success.

HEALTHY FOOD RETAIL

KEY FINDINGS & RECOMMENDATIONS

- STORE scores were low in all categories, although Beverages and Frozen, and Food Program scores were relatively higher compared to categories. The presence of healthier canned foods scored lowest at all stores, followed by Whole Grains & Beans, and healthier Snacks.

- Healthier canned goods have unique potential with small retailers concerned about lack of demand for more perishable healthy items (e.g. fresh produce).[5] LIAs may want to consider exploring the canned food category as a lower-risk option for small storeowners, as well as less perishable healthier options in the Whole Grains & Beans and Snack categories.

- LIAs may benefit from additional trainings on how to utilize complementary SNAP-Ed approaches in healthy retail, including in-store food demonstrations, tours, and "re-opening" events to encourage patronage by SNAP eligibles and the community at large in support of partner retailers.*

- Some LIAs made little progress in healthy retail in FFY17 beyond completing the required evaluation. The AZ Health Zone may want to collaboratively share expectations with LIAs regarding whether completion of required evaluations is considered progress towards goals in healthy retail implementation.

- The AZ Health Zone may want to continue to encourage the use of STORE findings to advance PSE change through additional training and/or technical assistance. It may also be helpful to provide enhanced technical assistance to LIAs who may need additional support to make progress in their healthy retail efforts.

*Recurring recommendation from FFY16

Gardens

Methods

Mixed-methods Analysis. Site-based garden partnerships (ST7) and champions (ST6) cultivated by Arizona's LIAs, as well as the implementation of garden supports (MT5), were assessed qualitatively. The narrative data was collected through the SARNs, and NVivo v11.0 software was used for coding and theme analysis. Additional quantitative data from SARTs was analyzed to assess LIAs' progress toward achieving gardening goals, including meetings, technical assistance, and trainings provided throughout the year.

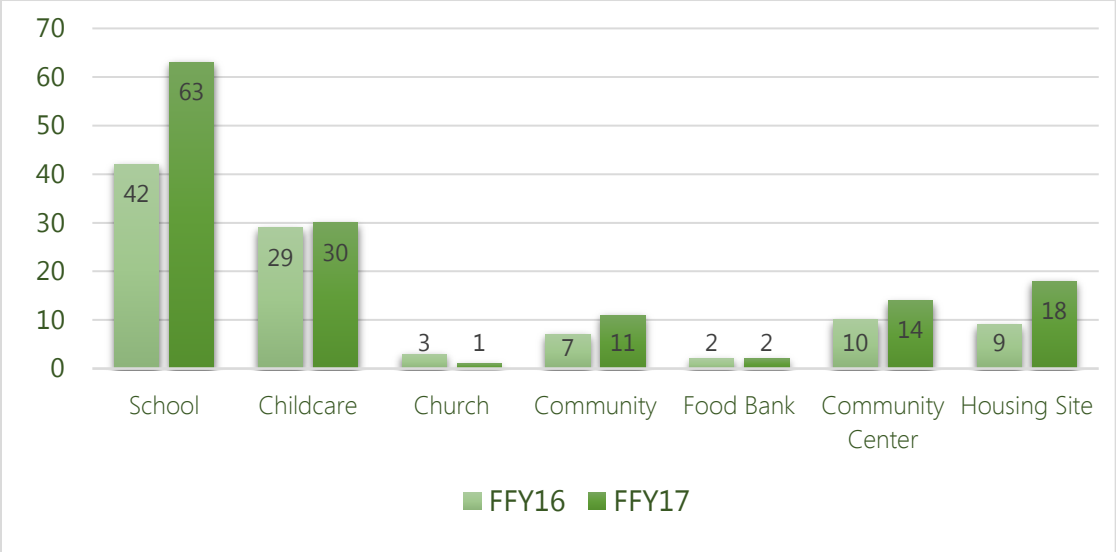
Results

Gardens remain one of Arizona SNAP-Ed's most popular and enduring strategies for engaging community partners. Gardens physically beautify a site and tangibly connect people to the foods recommended by MyPlate, while also encouraging a form of physical activity that is accessible to many people across the life cycle. Year two of the three-year SNAP-Ed work plan cycle was prolific for garden initiation and sustainability.

Wide Ruins students in Apache County learn about companion planting with fencing materials provided from a coordinating partner to support the school garden.

Nutrition Supports (MT5). LIAs in 12 counties supported 137 gardens in their target communities, compared with 107 during the previous year (Figure FS-5).

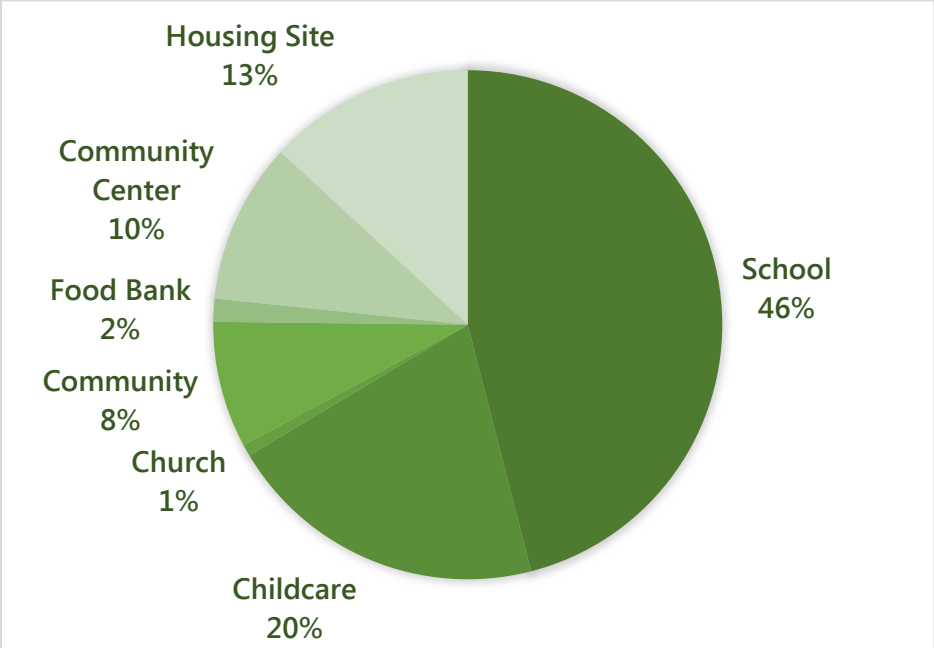
Figure FS-5. SNAP-Ed Supported Gardens in Arizona in FFY16 and FFY17, by Type



As in year one, LIAs played primarily a coordinating role within their gardening partnerships (ST7). Coordinating activities included 634 reported gardening meetings and technical assistance sessions in 159 communities. Gardens in two types of sites in FFY16 were no longer reported by LIAs in FFY17: those at WIC offices and clinics. This may reflect a more targeted focus by LIAs in year two of their garden work plans, as well as the possibility that gardens at these site types proved to be less feasible.

The Principal of Duncan Elementary in Greenlee County prepared to cut the ribbon at the school's garden opening. Afterwards, a student guide gave a tour.[11]

Figure FS-6. SNAP-Ed Gardens in Arizona, by Type (N=137)



In FFY16, schools, childcare centers, and community centers were the most popular locations for SNAP-Ed gardens. This remained the case in FFY17 with the exception of community center gardens (Figure FS-6). LIAs reported more gardens at housing sites than community centers in FFY17, which may reflect the greater sustainability of gardens when residents' ongoing presence can contribute to regular maintenance.

Three key themes were identified as SNAP-Ed garden strengths in FFY17: 1) the identification of an increasing number of ***garden champions***, 2) new ***sustainability supports***, and 3) new ***sectors-level partnerships*** in broader garden-related community initiatives.

Garden Champions (ST6). Strengths in FFY17 included the identification of an increasing number of garden champions at partner sites. LIAs in six counties identified specific garden champions. These champions played a vital role in garden sustainability, which is an area of intervention where LIAs previously reported struggling. They typically helped initiate the garden, provided technical assistance, and/or made regular use of the garden with site participants. They also often supported the gardens through hands-on management and maintenance over the long term, after the LIA had stepped away from an operational role. On the other hand, over-reliance on a single champion was also a potential risk if that person were to leave their role at the site. This challenge as it relates to overall staff capacity to support gardens is further explored later in this chapter.

> "It is heartening to see a high commitment level from the students and the math teacher, who is the school garden champion. After our garden build in the shop classroom, the students hosted a kimchi making party with the cabbage from the hoop house...the math teacher has been using the garden as a real life math application component to his classes, including calculus."

Sustainability Supports (MT5). LIAs in four counties reported new PSE supports at their sites that enhanced the garden's sustainability beyond the initial growing season. In Greenlee County, a new school garden has received significant community buy-in, including the donation of funding and materials to install an irrigation system, an outdoor classroom with concrete flooring, fans, lights, and a hand washing sink, a shed, a rainwater harvesting system, and a compost bin in addition to its 11 new raised garden beds. The garden is also certified through the ADHS for on-site consumption. In two counties, formalized garden networks or committees are now linking garden coordinators with other garden champions to share ideas and resources, and to alleviate SNAP-Ed's role as a perpetual lead. This systems level change provides institutionalized support for the gardens across champions and sites.

In several counties, additional environmental supports were put in place to support garden sustainability, including a greenhouse at one garden and a wheeled container system to address theft issues at another.

> "Our health educators have worked with schools with the 21st Century grant to create a Garden Champion Program for each of the schools we work with. This was necessary to help the schools take ownership of their school gardens, and allows for greater sustainability of school gardens in our partner sites."

Sectors-level Partnerships. Settings-level partnerships continue to dominate garden efforts, but unique sectors-level activities also occurred in FFY17 in several counties. While this work does not yet meet the USDA's definition of multi-sector partnerships and planning (ST8),[7] it does reflect new collaborative work with entities at the sectors, rather than settings level of the SNAP-Ed intervention model. In one county, the LIA lead staff has been a pivotal convener for an emergent coalition that will bring together cross-sector partners to open a future community garden in a SNAP-Ed eligible location.

> "The City's Planning and Zoning approached [our coalition] with a proposal to partner with them to develop a community garden and complementary healthy community design initiatives in an at-risk area that is targeted for a revitalization strategy by the City. The project could potentially be supported by Community Development Block Grant funding. We will be developing and submitting our concept and engaging in further discussions with the City team."

In another county, the LIA was invited by the County Zoning Commission and the nonprofit Watershed Management Group to participate in discussions around zoning for home chicken-keeping and rainwater management for home gardens.

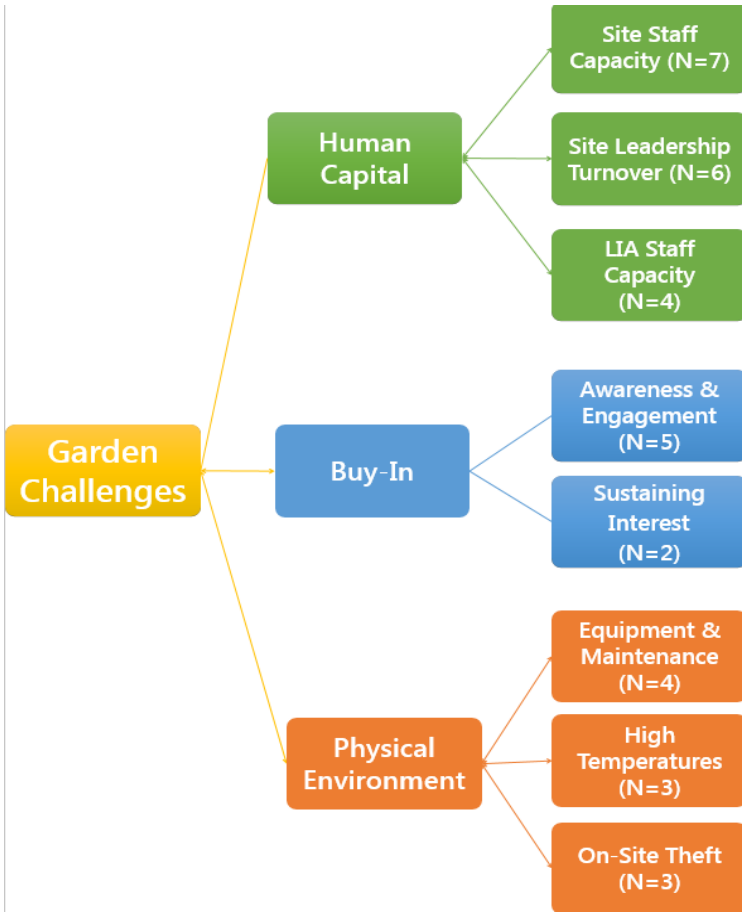
These opportunities illustrate how SNAP-Ed gardening work has expanded in some counties to address community-level gardening issues that have the potential to reach more participants than one garden at a single site.

> "Through these meetings, the Garden Kitchen was able to promote the interests of our participants by sharing that backyard chickens can be a great way to stretch a limited food budget by providing a low-cost lean protein source (eggs) and can reduce the waste associated with gardening...[the] Watershed Management Group has approached us to help facilitate a program where low-income participants have access to small grants and supplies to practice water harvesting in their home gardens."

In spite of supporting many thriving gardens in FFY17, LIAs' challenges in this strategy were also significant. They reported three key types of barriers: 1) managing the ***physical environment,*** 2) ***gaining buy-in*** at many levels, and 3) a ***lack of capacity*** in the form of human capital. Figure FS-7 further illustrates related subthemes, along with the number of counties who reported the barrier.

Some of these barriers are arguably outside of the LIA's scope, such as turnover in site leadership and staff, or equipment issues (e.g. irrigation systems) that are not in their purview. Some barriers, like on-site theft, were mitigated with rolling carts to transport container gardens to secure areas when necessary. With respect to staff and leadership turnover, several LIAs utilize sustainability plans with their sites to enhance the likelihood that the garden can weather changes in personnel.

Figure FS-7. FFY17 Garden Challenges, by Number of Counties Reported



It is notable that some strengths and challenges contrasted with each other. For example, while several LIAs have successfully identified new garden champions, the disadvantage has been in finding other engaged staff when that single champion leaves.

Sustainability supports, like irrigation systems and critter fences, are similarly double-edged. This equipment is often essential to maintain a thriving garden, but they may not always be SNAP-Ed allowable, which oftentimes led to leveraging resources from the site or other partners. This should be considered as a garden strength, in that non-SNAP-Ed supports were also convened to support the garden. However, problems with leveraged equipment occurred at some sites, which were outside of the LIAs' control.

Timely repairs were reportedly inconsistent at some sites and threatened the season's harvest, which was a barrier reported in four counties.

GARDENS
KEY FINDINGS & RECOMMENDATIONS

- SNAP-Ed gardening efforts in FFY17 continued to progress, and benefited from strong champions, the installation of garden sustainability supports, and new sectors-level partnerships.
- Many garden challenges persist. Most frequent among them were a lack of staff capacity at garden sites, challenges with the physical environment, and inconsistent buy-in to sustain efforts. Additional investigation by the AZ Health Zone SET may help identify strategies to address garden capacity and sustainability challenges.
- LIAs may benefit from additional peer-led sharing or AZ Health Zone training on how to assess and support a garden site's staff capacity prior to installation, in order to ensure greater sustainability. This may also allow SNAP-Ed staff to more successfully transfer operations after a garden's initial establishment.
- LIAs may benefit from training or technical assistance regarding other issues that can be proactively addressed prior to garden installation. For example, discussing expectations about seasonal weather so that all stakeholders anticipate enhanced maintenance needs, or proactive planning for a fallow season while sustaining enthusiasm for the garden initiative.

Farm to Institution

Methods

Mixed-methods Analysis. Readiness (ST5) and partnerships (ST7) pertaining to Farm to Institution (FTI) programs among LIAs were assessed qualitatively via narrative data collected through the SARNs. The SET used NVivo v11.0 software for coding and theme analysis. Additional quantitative data from the SARTs was reviewed to assess LIAs' progress toward achieving FTI goals with respect to site-level collaborations, as well as the development of action plans in year two of the three-year work plan cycle.

Results

Six LIAs in five counties continued their work on FTI initiatives in FFY17. Compared with the other Food Systems strategies in Arizona SNAP-Ed, FTI efforts remained in primarily exploratory phases for most LIAs during FFY17. Efforts were centered primarily at schools and childcare settings, whereas in the previous year, LIAs sought opportunities with community and senior centers. These either did not come to fruition or were not sustained.

In FFY17, LIAs reported participating in numerous meetings with sites and coalitions to advance FTI activities, often in combination with gardens. Each LIA had at least one action plan in place with a site or multi-site partner to advance shared FTI goals, which was a key indicator for progress in readiness (ST5). Table FS-4 characterizes LIAs' action plans in FFY17 to advance their FTI goals.

This childcare center garden in Maricopa County provided healthy snacks.

Table FS-4. LIA-Supported Farm-to-Institution Action Plans in FFY17, by County

COUNTY	FTI Setting[a]	No. of Action Plans	Details
Coconino	Learn	1	The LIA collaborated on a Farm-to-School grant application with one school.
Mohave	Learn	1	The LIA coordinated efforts between a local farm and elementary school for anticipated procurement in FY18.
Maricopa	Learn	3	1) One school district procured local micro-greens from LIA-supported grower. 2) A second school district wants to purchase local produce from an LIA-supported local growers' cooperative. 3) A third school district published guidelines for garden harvest use in food service.
Pima	Learn	1	The LIA convened an ECE multi-site leader and local produce vendors to develop plan for Farm-to-ECE procurement.
Yavapai	Learn	1	Arizona-grown produce was purchased by an LIA partner when available to serve four ECE locations, along with the local school district.

[a] Settings align with those described in the National SNAP-Ed Evaluation Framework Interpretive Guide.

In addition to the action plans, qualitative analysis suggests that FTI partnerships (ST7) have progressed in their development and, in some cases, accomplished FTI goals. At one Early Childhood Education (ECE) site, garden certification has provided the opportunity to use garden-harvested produce for snacks.

Other FTI efforts (excluding gardens, which are described earlier in this chapter) hewed more closely to DE through Farm to School promotional marketing, school events, and produce sampling.

Two consistent challenges within FTI work emerged from the qualitative analysis. First, LIAs experienced barriers to coordinating procurement of local foods because of ***supply chain issues with farmers.***

> "[The ECE group] and [the local distributor] are working directly to explore the possibilities of a procurement contract that satisfies the needs of all involved. At this point there are setbacks due to the lack of variety and volume in order to provide produce for all [40] sites."

Commitment from farmers and vendors to supply FTI ingredients or products depends on initial capacity by these entities as well as a commitment to sustain the procurement arrangements long term, including across seasonal or other production variations that may affect the amount of product available for sale. Thus, although LIAs made progress in encouraging the demand for FTI procurement with their site partners, the supply of local produce to meet the demand has also emerged as a capacity barrier.

> "It has been difficult to set up a roundtable discussion with all interested parties... Farmers are often not available to meet, so it has been difficult finding out their requirements for participating in a [procurement] program."
>
> "In our experience, this strategy is very complex and requires support from multiple government agencies and buy-in from multiple sectors to be successful."

Secondly, some LIAs struggled with convening key stakeholders to progress their FTI initiatives. Work in this arena may entail building relationships with farmers, communicating with site or district-level food service personnel, conducting training and technical assistance internally and with partners, and becoming familiar with certification standards such as the USDA's Group Good Agricultural Practices (GroupGAP) program and the ADHS Garden Certification Program.

As described in last year's report, FTI can present a complex formula for success, requiring commitment from many more stakeholders beyond the LIA and a single partner site. LIAs reported challenges around bringing together the stakeholders necessary to advance their FTI work.

Some LIAs reported minimal FTI progress from FFY16. For these agencies, it may be worthwhile to consider whether continued participation in FTI fits with their current goals and capacity. Overall, however, the FTI strategy in Arizona's SNAP-Ed program has matured, and has progressed from an initial understanding of the contours of FTI work, to digging deeper into meaningful planning and implementation.

FARM TO INSTITUTION

KEY FINDINGS & RECOMMENDATIONS

- SNAP-Ed FTI efforts have progressed into meaningful collaborations, implementation, and the achievement of new supports for several LIAs, such as garden-supplied onsite procurement and new farmer-supplied ingredients in two schools. For other LIAs, FTI work was either less substantial in FFY17 or hewed toward DE.
- DE activities, such as Farm to School month promotion, one-time events, and produce samplings play a role in building awareness and momentum for FTI initiatives. On their own, however, they do not institutionally change policies, systems, or environments as measured by the National SNAP-Ed Evaluation Framework.[7] The AZ Health Zone may want to consider providing additional technical assistance regarding the spectrum of PSE work as it pertains to FTI.
- For LIAs whose FTI work was less substantial in FFY17, it may be worthwhile to consider whether FTI still fits within their work plans relative to other SNAP-Ed efforts.
- LIAs could benefit from training and technical assistance on how to progress early efforts with partners and coalitions in the area of procurement, including effective methods for engaging farmers and other stakeholders to ensure consistent supply chains for relevant FTI products and ingredients.

Summer Food Service

Methods

Mixed-methods Analysis. Partnerships with sites (ST7) and coalitions (ST8) as well as nutrition supports (MT5) pertaining to the Summer Food Service Program (SFSP) were assessed qualitatively via narrative data collected through the SARNs. The NVivo v11.0 software was used for coding and theme analysis.

As in FFY16, the AZ Health Zone implemented a SFSP social marketing and promotional campaign to encourage participation, titled "Summer Lunch Buddies." Media and marketing materials included posters, flyers, postcards, media talking points, online banners and images, and social media samples.[12] The content and materials were provided to LIAs to integrate into their local promotional efforts.

Results

Seven LIAs in 11 counties implemented the SFSP strategy in FFY17. Programming in this area grew substantially from the previous year, as LIAs became more familiar with their communities' SFSP needs and deepened their relevant partnerships. The primary nutrition supports (MT5) provided hewed toward traditional SNAP-Ed supports, including meal site promotion and DE during meal hours.

Coconino County developed marketing materials to promote summer meal sites.

"Staff offered support to sites located at WIC clinics by developing flyers for clinics promoting SFSP and showing the sites located near the clinic. In addition, staff provided training to WIC interns on SNAP-approved activities and resources to use with youth and families participating in the SFSP program. [The LIA] supported a total of 16 sites – 12 WIC sites, 1 school district, and 3 Native Health community sites."

However, in FFY17, LIAs reported that they were ***more engaged in applying DE and promotional supports*** to encourage participation in the SFSP and provided appealing activities for families who attended the SFSP.

Kick-off events were one such promotional activity that had a notable increase in FFY17, with two LIAs in six counties participating, compared with one LIA in one county last year.

> "The kickoff event was hosted in collaboration with the Library and the Care Center staff. The Care Center is a family resource center for the school district and is located next to an elementary school which has the highest free-and-reduced lunch percentage in the district. The kickoff was promoted throughout the community with fliers, posters, word of mouth, social media and school announcements. An estimated 200 youths and adults attended the event."

DE activities during meal hours also showed an uptick. LIAs reported providing more frequent activities at more SFSP meal sites, including libraries, elementary and middle schools, community centers, and mobile meal units. Most of these activities included physical activity games, although recipe sampling and nutrition education were also common.

Leveraging partnerships (ST7) was also a common FFY17 theme among LIAs to implement SFSP kick-off events, connect sites to additional food access programs, and to begin conversations to expand SFSP access in communities. For example, in Yuma County, the LIA staff supported a school in their application to become a future summer meals provider.

> "A school in the eastern part of our county does not participate in the SFSP, but due to our promotion efforts with them during our DE activities, the school nutrition director is now interested in becoming a sponsor and requested information on the process...We will remain engaged with this director to provide further assistance through this process as needed."

In Apache County, sectors-level collaborative work (ST8) with the local hunger coalition included new discussions around supporting the SFSP more broadly in their county. These conversations may not have occurred without the SNAP-Ed LIA at the table, which is a first step to making community-level enhancements to the SFSP.

Challenges to LIAs' SFSP work reflected carry-over struggles from the previous year. There remain significant barriers for rural children to access distal meal sites, which was a challenge reported by LIAs in two rural counties. This is a realm where traditional SNAP-Ed DE and promotional efforts will not address the deeper issue of transportation. Some counties have mobile meal programs, but LIAs report that demand for such services is much stronger than supply. Institutionalized transportation barriers remain an area in which LIAs are challenged to meaningfully impact within the current conceptualization of SNAP-Ed programming in Arizona, and to a lesser extent, by the limitations of SNAP-Ed allowable expenditures. That said, several LIAs in rural counties have capitalized upon existing mobile meal initiatives in their communities through complementary DE and sampling activities.

> "Through [the hunger coalition] we have started the conversation about how to reach those smaller communities that don't have an SFSP program. Some ideas have included a mobile food truck, increased marketing in those communities, and additional events to promote SFSP, including kick-offs and community based activities."

> "Staff spent one day each week traveling on the [summer meal bus] with Food Service staff to provide healthy snacks to youth and their families. Samples of the *Southwest Popcorn* snack were distributed to over 453 youth and family members this summer, along with a copy of the snack recipe as well as a jump rope to encourage physical activity…Many in attendance were surprised to learn that popcorn is a whole grain, and when eaten without lots of butter and salt and in the proper portion…it is considered a healthy snack!"

Examples like the quote at left from Pinal County, while not PSE innovations per se, do illustrate how LIAs are creatively expanding traditional SNAP-Ed DE to nontraditional venues, and seeking to make summer meal programming engaging for participants.

Another carryover barrier in FFY17 related to communication with potential SFSP partners, sites, and champions. Two LIAs in four counties described challenges such as a lack of buy-in or interest from partners in promoting the SFSP, a desire to "not be promoted" due to the site's lack of capacity to serve additional meals, and lack of follow up communication from sites to coordinate collaborative SFSP activities.

Youth participate in an SFSP kick-off event in Apache County.

SFSP programming continued to gain momentum in FFY17 as newer SNAP-Ed strategy, primarily through deeper engagement in promotional and DE efforts. LIAs are required to evaluate their SFSP interventions quantitatively every two years using the Summer Food Checklist (Checklist).[13] Baseline scores were collected in FFY16, and as LIAs continue to enhance SFSP supports in their communities, they will be required to complete the Checklist again in FFY18. At that time, it will be possible to quantitatively measure changes in SFSP supports over time, as well as determine whether meal participation at SNAP-Ed supported sites also increased over the same period.

SUMMER FOOD SERVICE PROGRAM

KEY FINDINGS & RECOMMENDATIONS

- Supports for the SFSP grew substantially in FFY17 as LIAs became more familiar with community SFSP needs and deepened their relevant partnerships.
- Supports in FFY17 remained primarily within the provenance of traditional SNAP-Ed activities, including a notable increase in SNAP-Ed supported kick-off promotional events and DE during meal times.
- Specific challenges that LIAs reported related to addressing transportation barriers in rural areas, encountering meal sites that did not want to be promoted, and languishing follow-up from some partner sites to coordinate activities.
- LIAs could benefit from further training and resources on how to identify supportive SFSP partners in their communities, including WIC and DES collaborators, SFSP managers, and cross-sector champions who can help build awareness and participation at meal sites.*
- Leveraging LIAs' partnerships and collaborations to develop less traditional meal participation settings may further accelerate progress in increasing SFSP participation. Locations where families already congregate, such as libraries, clinics, food banks, places of worship, and community gardens, as well as mobile meal units, are examples of settings that could support greater SFSP participation through innovative SNAP-Ed approaches.

*Recurring recommendation from FFY16

Farmers' Markets

Methods

Qualitative Analysis. The SET assessed the readiness and capacity (ST5) of LIAs and their partners related to farmers' market and EBT efforts, as well as PSE supports (MT5) put in place since FFY16. The analysis was conducted by reviewing qualitative data collected through the SARNs, using NVivo v11.0 software for coding and theme analysis.

Results

Six LIAs in eight counties implemented the Farmers' Market strategy in FFY17. Table FS-5 provides a summary of new supports (MT5) implemented in five counties during FFY17.

Table FS-5. Farmers' Market Nutrition Supports in FFY17, by County

COUNTY	PSE Nutrition Support	No. Markets	LIA Role
Coconino	New farmers' market in Page	1	Participated in related community improvement plan workgroup
Gila	Implemented Double Up Bucks	1	Worked closely with market manager to establish and promote Double Up Food Bucks with new SNAP EBT system
Greenlee	Changed the Clifton farmers' market day and time	1	Provided ongoing collaboration with market manager, including providing food demos and promotional support
Mohave	Obtained SNAP EBT equipment	1	Played a high level coordinating role to support market operations with EBT
Pima	Obtained SNAP EBT equipment	1	Provided technical assistance and training to obtain and integrate equipment

The Double Up Food Bucks Program in Arizona.

These supports reflected a diversification of efforts from FFY16, when LIAs focused primarily on supporting new markets and encouraging EBT equipment.

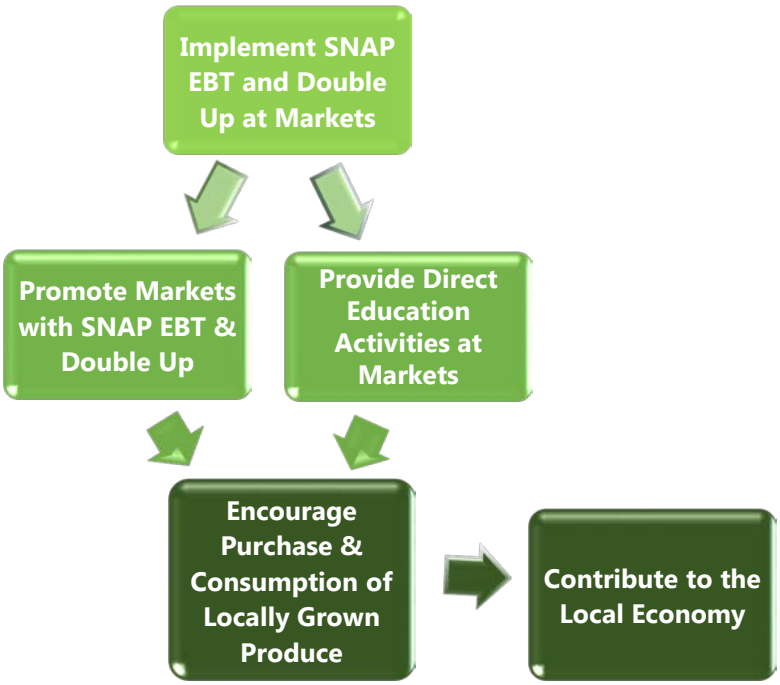
Readiness and Capacity (ST5). Another sign of progress in this strategy was LIAs' engagement with the Farmers' Market Double Up Food Bucks (Double Up) program in four counties. Double Up offers SNAP shoppers at farmers' markets up to $20 in additional buying power that they can use to buy Arizona-grown produce. In FFY17, Double Up was implemented at LIA-supported farmers' markets in four counties, providing opportunities for coordinated efforts to reach SNAP-Ed eligible shoppers.

Typically, LIAs promoted the Double Up program in concert with their usual farmers' market promotion efforts; they also provided DE activities at markets where Double Up was offered, such as informational booths and recipe tastings.

> "[Our] promotion has included providing farmers' markets maps to sites, providing bus route maps to farmers' markets, to our sites, and working to set up farmers' market tours. We have also highlighted the WIC coupons for farmers' markets as well as the Double Up program to our adult sites and participants."

The synergy of efforts is illustrated in Figure FS-7.

Figure FS-7. SNAP-Ed's Coordinated Efforts in FFY17 with Double Up to Encourage EBT Use at Farmers' Markets



Challenges with respect to readiness and capacity in the Farmers' Market strategy revolved around three main themes: ***Vendor and produce shortages, stalled EBT efforts,*** and ***challenges with partners.***

Vendor Shortages. Two LIAs in four counties reported challenges related to having a sufficient quantity of vendors selling at their farmers' markets to ensure a successful SNAP payment program. A related challenge was simply having enough vendors participating to attract shoppers and sustain the markets. This issue was reported exclusively in rural counties, three of which had successfully implemented new markets or new SNAP payment methods last year.

"The Market [governing] board is a little apprehensive about their ability to sustain the market because they struggle with having enough growers to sell fresh produce at the market. Adding EBT to their market is a cause for concern to the board as they feel they will not have enough produce to outweigh the cost and effort it has taken so far to become an EBT retailer."

In one county, the LIA is responding to vendor shortages by leveraging partnerships with the local economic development corporation as well as their relationships with farmers' markets in other counties to encourage the participation of more vendors.

"The stress of the out-of-state move by the largest produce vendor at the Farmers' Market was felt by all. The region is not easily accessible by larger growers located outside of the county, and refrigerated transportation options are also limited among those growers that the markets would typically recruit."

Stalled EBT Efforts. After gaining momentum with market managers in FFY16, LIAs in four counties reported that their efforts to encourage application for EBT equipment had stalled. Again, these challenges were reported in rural counties and were in some cases related to concomitant challenges in attracting enough vendors to the markets.

Other challenges relating to advancing progress in implementing EBT at more markets included unfamiliarity with the application process and wariness regarding the potential bureaucracy.

Promotion with DES. LIAs in two counties reported barriers with promoting farmers' markets at DES offices, while no LIAs mentioned this barrier in FFY16. The change may reflect LIAs' progressing efforts to promote farmers' markets with additional partners in year two of the work plan cycle. LIAs' reported experiences with DES suggested that the local offices were unaware of or seemingly unwilling to partner with SNAP-Ed on farmers' market promotion, in contrast to strong state-level collaboration between the two programs. This is an area in which LIAs requested AZ Health Zone's support in making connections and contacts with local offices.

"The team has found it challenging to make contact with DES and WIC office managers. The team is looking to present to office staff that work directly with clients to educate and promote the use of EBT at farmers' markets and gardening. Many of these staff are unaware that this is possible."

A farmers' market bulletin board at a WIC clinic in Maricopa County.

Barriers with DES contrasted with the historically collaborative relationships that many LIAs have built with their local WIC clinics. At WIC there is an inherent focus on nutrition and family health, which may encourage natural partnerships with SNAP-Ed. DES's primary focus on economic security via SNAP benefits may not facilitate the same opportunities for relationship building, despite SNAP-Ed's role as a sister program.

Multi-level Intervention Highlights

Enhancing Access, Purchasing, and Promotion at the Payson Farmers' Market in Gila. The Gila County Department of Health and Emergency Management's SNAP-Ed program (Gila SNAP-Ed), in coordination with its subcontractor Pinnacle Prevention, has implemented an expanding combination of PSE and DE supports at the Payson Farmers' Market through their successful relationships with the Market managers. Gila SNAP-Ed's partnership now includes implementation of the Double Up program in combination with family-friendly educational activities during market hours. As described earlier in the chapter, Double Up provides up to $20 to SNAP shoppers at Payson Farmers' Market to purchase Arizona-grown produce.

Scavenger hunt scorecard.

The educational activities offered by Gila SNAP-Ed include navigator services for new SNAP shoppers and market scavenger hunts. These activities encourage patronage by new shoppers and support engagement in the market experience as a fun family outing. The market navigation services reduce barriers to using SNAP and Double Up at the market by familiarizing customers with the market, the purchasing procedures, and the vendors.

"The Gila SNAP-Ed team complemented the great work of the market with activities such as a fruit and vegetable scavenger hunt and market navigation assistance for SNAP and Double Up customers. The purpose of this effort was to increase connections between SNAP customers and local growers at the market and increase SNAP customers' knowledge of seasonality, storage, and cooking with produce."

These multi-level interventions were good for business for the second year in a row. By the close of the season, Payson Farmers Market saw a 65% increase in EBT purchases

from the previous year, with a total of $2,379 in SNAP sales by the end of the market season. This included reach to 61 new SNAP customers.

The work of Gila SNAP-Ed and the Payson Farmers' Market illustrates how the combination of multi-level SNAP-Ed approaches can have a synergistic effect on healthy shopping behaviors. This creates a win-win-win for the community by enhancing the affordability and appeal farmers' markets, stimulating the local economy, and supporting small farmers.

Young customers complete scavenger hunts at the Payson Farmers' Market.

FARMERS' MARKETS

KEY FINDINGS & RECOMMENDATIONS

- LIAs in several counties have successfully implemented new PSE supports with their partner farmers' markets, including starting a new market and new payment or purchase incentive programs.
- This year, progress to implement additional SNAP EBT systems with some partners stalled. LIAs would continue to benefit from trainings on how they can support EBT certification of farmers' markets.*
- LIAs in several rural counties reported struggles to maintain sufficient vendors, which is a threat to EBT implementation as well as market sustainability more broadly. LIAs in rural areas may benefit from support from the AZ Health Zone or other coordinating agencies to address systems-level challenges currently reported in their local foodsheds, which result in many barriers to healthy retail, including a paucity of farmers' market produce vendors.
- Collaboration with DES could be strengthened at the site, county, and state levels to support LIAs' efforts to promote the use of SNAP benefits at farmers' markets.

*Recurring recommendation from FFY16

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Active Living

Background

Arizona's SNAP-Ed program has embraced work in the area of active living in order to improve the physical activity environment to specifically benefit our SNAP-eligible population - the 13.3% of families in the state living in poverty.[1] In this predominantly rural state, it can be difficult to find information about the physical activity environment for small communities. However in FFY17, researchers at the University of Arizona Norton School of Family and Consumer Sciences prepared hyper-local community profiles for small rural communities across the state. According to these profiles, the percentage of the population able to walk to a public park (measured as a walk of ½-mile or less) in lower-income rural towns in Arizona averages 23% (range 0– 72%).[2] In Maricopa and Pima counties, home to the state's largest cities, the percentage of the city population within a 10-minute walk from a park is, on average, 59%.[3] These statistics reflect poor access to physical activity resources, especially for the 7% of Arizona households that lack a vehicle.[4] These data suggest that supporting ongoing active living opportunities as well as mobilizing communities to advocate for changes to active living policies in Arizona are vital for reducing statewide rates of overweight and obesity.

Active living initiatives supported by Arizona SNAP-Ed to address these challenges encompass four distinct, yet intersecting strategies:

1. Strengthening **Active Living Policy** at the community level and building the capacity of community organizations to effect change. Key efforts in this area include: 1) understanding the policy landscape and determining where SNAP-Ed efforts can be most effective, and 2) building capacity among both SNAP-Ed staff and community partners through trainings and technical assistance to affect active living policy.

2. Promoting participation in and use of local **Physical Activity Resources.** This strategy includes: 1) identifying, promoting, and enhancing free and low-cost physical activity (PA) resources, and 2) building partnerships with parks and trails organizations and other community organizations to promote and enhance PA resources.

3. Supporting **Family-Friendly Physical Activity Opportunities**. Key efforts in this area include: 1) building partnerships with other organizations invested in active living for families at the community level, such as biking clubs and organizations that promote neighborhood walkability, and 2) increasing capacity among SNAP-Ed staff to plan and/or lead PA event efforts in order to maximize participation by and benefit to SNAP-eligible individuals.

4. Using **Point-of-Decision Prompts to Encourage Use of Stairs.** Point-of-decision (POD) prompts encourage individuals to increase functional activity in small increments throughout the day by choosing stairs over elevators. Prompts such as these in SNAP-Ed settings can support other PSE changes that encourage PA.

Below, Active Living short-term (ST5, ST6, ST7, ST8) and medium-term (MT6) outcomes in FFY17 are reported in alignment with the National SNAP-Ed Evaluation Framework.

Active Living Policy

Methods

Progress toward local implementing agency (LIA) goals in active living policy were evaluated using quantitative analysis in Excel of LIA semi-annual report tables (SARTs) and qualitative analysis of text from LIA semi-annual report narratives (SARNs). NVivo v11.0 software facilitated coding and theme analysis of SARN text. Findings were considered in terms of LIA strengths and challenges regarding active living policy-related activities, including building readiness and capacity (ST5), cultivating champions (ST6), strengthening multi-sector partnerships (ST8), and increasing physical activity and reduced sedentary behavior supports (MT6).

Results

Active Living Policy Reach and Training. Five LIAs in five counties reached an average of 7.4 communities with active living policy work, vs. 5.2 communities reached in FFY16. Three LIAs offered 68 trainings at 14 sites as part of their active living policy work in FFY17 (ST5). This compares favorably to FFY16 when these LIAs offered 11 trainings reaching 12 sites. Although two LIAs did not offer site-level trainings in FFY17, they were engaged in policy work in other ways; one working with a local coalition, and the other just beginning to seek systems changes at sites in their county. LIAs working in the two more urban counties (Maricopa and Pima), who had more history working in active living policy, tended to define communities more broadly. This may be because their prior active living policy work has shown them the utility of reaching out to different types of stakeholders in their efforts to encourage policy change.

Table AL-1. Active Living Policy Reach and Trainings, FFY17

COUNTY	No. Communities Reached	Types of Partners or Communities	No. Trainings	No. Sites Trained	No. Meetings with Coalitions
Coconino	3	Town, coalitions	0	0	11
Maricopa	10	Neighborhoods, cities, county, regional planning agency	1	1	12
Mohave	2	Towns	0	0	
Pima	18	Neighborhoods, coalitions, education partner sites	56	9	35
Yavapai	4	Towns, state transportation authority	11	4	10
Mean, All Counties	7.4	Total, All Counties	68	14	68

Strengths in Active Living Policy

Although the LIAs in Arizona's most densely populated counties (Maricopa and Pima) continued to build on their FFY16 successes most intensively, qualitative analysis of accomplishments reported by the other three LIAs in their SARN narrative reports showed that action plans around active living policy were beginning to crystalize for them as well. In the five counties listed in Table AL-1 above, and three additional counties that had unexpected opportunities to encourage active living policy (Cochise, Santa Cruz, and Yuma), forward progress was made in five key areas. These included: 1) using results from the Wilder Collaboration Factors Inventory (WCFI) to strengthen coalitions, 2) driving coalition priorities, 3) supporting systems changes at sites (settings level), 4) engaging in policy advocacy, and 5) approaching active living policy work with a health equity lens.

Using Results from the WCFI to Strengthen Coalitions (ST8). Two LIAs in two urban counties documented their successes in supporting coalitions to make changes based on the results of the WCFI, a collaboration evaluation administered in FFY16.[5] Both LIAs reported that their coalitions valued the WCFI results because they reflected what participants already knew about the coalition, but ***provided a platform to discuss how to improve*** upon weaker success factors. One coalition developed a more structured work plan with clearer objectives and accountability. They also sought to expand their membership to ensure that additional relevant stakeholders were engaged. The other coalition changed their organizational model to focus on subcommittees, including a leadership subcommittee tasked with researching grant opportunities to address a funding gap.

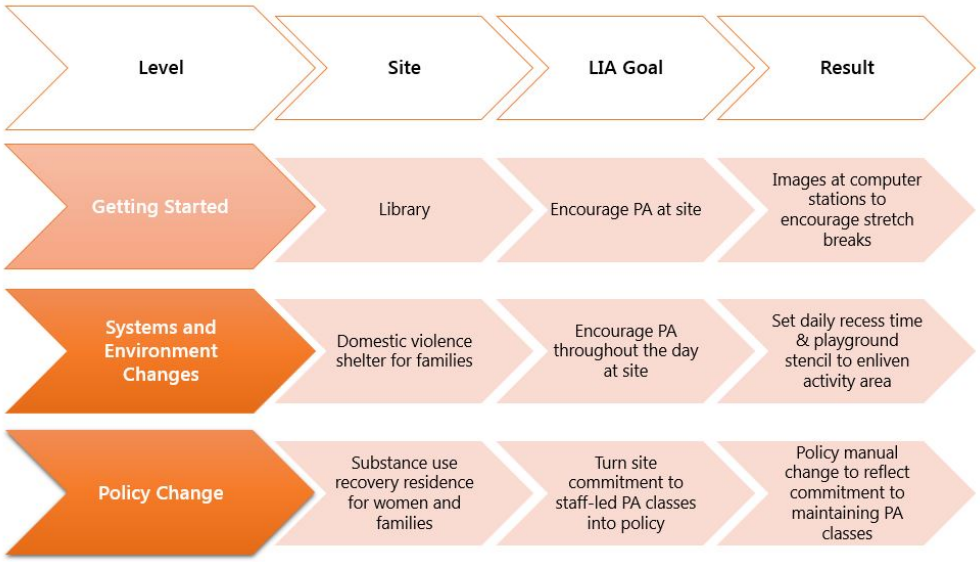
Pima County coalition members used the WCFI results to strengthen their coalition.

Driving Coalition Priorities (ST8). Building on their work in FFY16 in developing relationships with coalitions, LIA staff in three counties began advocating more for and aligning themselves with key issues of interest to low-income communities. Which issue(s) became coalition priorities varied across the state, but they included: healthy eating, obesity prevention, shared use agreements with school districts, walkability, and bike lanes.

"SNAP-Ed has been able to assist with the development of the County Health Improvement Plan. Specifically we have identified strategies for achieving Healthy Eating, Diabetes, & Obesity goals in the county."

Supporting PSE Changes at Sites (Settings Level) (MT6). Activities reported from three counties suggest a progression of PSE changes at partner sites (see Figure AL-1). LIAs expressed new understanding of this progression as well. For example, the LIA working on systems and environment changes with a domestic violence family shelter expressed their intention to support the future development of a written active living policy. LIA staff working at the recovery center specifically pointed to the policy changes as building on their earlier direct education (DE) and technical assistance work.

Figure AL-1: FFY17 Progression of PSE Changes at Selected SNAP-Ed Sites



"These sites have been provided technical assistance on selecting activities that are appropriate for their population, how to implement these activities, and the best language to use on their calendar. At one site, these activities have been so successful that their site leaders have written a policy stating that these classes will continue to be offered into their policy manual!"

Engaging in Policy Advocacy for Community Design and Safety. This engagement has its roots in the FFY16 strength of developing relationships and communication with government agencies and decision-makers. FFY17 advocacy topics included:

- Planning and modifying the built environment
- Incorporating health indicators into planning
- Pedestrian and biker safety
- Public (active) transportation
- Shared use advocacy

Table AL-2, below, outlines specific advocacy initiatives and topics addressed by LIA staff in three counties.

Table AL-2. Policy Advocacy Progress by County, FFY17

County	Initiative	Level
Maricopa	Reviewed comprehensive, general, and specific (e.g., bike systems) plans to advocate for active living considerations	Local, Regional
	Developed a plan review toolkit for non-experts, coordinated with state planning association for review and comments	Local, Regional, State
	Raised the profile of lower income communities in discussions of active living planning	Local, Regional
Maricopa, Pima, Yavapai	SNAP-Ed LIA staff increased profiles in their communities as active living policy stakeholders and experts	Local, Regional
Yavapai	Completed a mobility management plan for regional Health Impact Assessment (HIA) & presented to five audiences of decision-makers	Regional

In addition to the advocacy activities mentioned above, state legislative representatives called on staff at one urban county LIA as experts to take part in a discussion of community health concerns. This was an encouraging sign for both the LIA and the progress of active living policy at the state level. LIA staff turned the opportunity to speak at the meeting into a chance to inform active living policy work at the state level, speaking directly to legislators about the realities of safe physical activity spaces in many lower-income communities.

> "…As part of this session we discussed the barriers that low-income communities face in getting enough physical activity, specifically the lack of safe spaces for people to be active in their neighborhoods. We also used this discussion to highlight the opportunities for system and environmental changes that the state could help to implement in order to overcome these challenges."

Approaching Active Living Work with a Health Equity Lens. The two urban LIAs continued to demonstrate strength in active living policy, specifically by focusing more on the ways that active living improvements in cities and towns had the potential to improve health equity. This theme is distinct from driving coalition priorities, because in this case, LIAs are not just infusing low-income concerns into coalition work, but reaching out to decision makers, influencers and governing bodies to encourage them to engage more deeply in similar considerations (ST5). This health equity focus showed positive results in FFY17, including a commitment from a regional transportation authority to be more inclusive.

For the second urban LIA, active living policy was a way to tie their historic focus on health equity as an agency more strongly to their SNAP-Ed work specifically. Through a project focused on tree planting and maintenance, and leveraged by another grant, the LIA agency was able to:

- Expand their active living programming by mobilizing the community around tree-planting events and community clean-ups.

> "The presentation initiated a good discussion and [the transportation authority] indicated that it wants to involve underserved populations in the planning process and ensure that the county bike and pedestrian network serves all users. We will continue to be part of this process and will provide [the authority] with a list of organizations/groups we are already working with for their outreach."

- Support community walkability in the long term through provision of shadier places to walk.
- Seek equity in shade cover in their targeted neighborhood by aiming to match the city's overall average percentage of shade cover.

Challenges in Active Living Policy

Challenges in active living policy centered on several perennial and related themes: 1) lack of funding for infrastructure improvements, 2) a desire for more community involvement, 3) a lack of site champions and 4) a need for more outreach to policy-makers.

The theme regarding **lack of funding for infrastructure improvements** recurred from FFY16, but in FFY17, it was specifically linked to a second theme, **a desire for more community involvement**, and a concern that a lack of funding could cause community partners to feel that their mobilization and advocacy efforts were in vain. As LIAs invest more time and effort in policy advocacy and bringing community concerns to their coalitions and decision-makers, a lack of funding for needed active living enhancements is a critical concern. If LIAs encourage community involvement but then as a result, nothing changes, residents may be less likely to become involved in the future.

> "During FFY17, [our partner] moved away from providing Neighborhood Walkability Assessments. They noted frustration from participants that upon completion of an assessment, there was a lack of funds to finance the solutions needed to overcome the walking challenges of the neighborhood. After the county bond that included funds for walking and biking infrastructure failed to pass, they decided to move away from actively seeking neighborhoods for assessment."

A third challenge, which builds on the challenge raised in FFY16 of competing site priorities, was concern about a **lack of site champions** (ST6) who would be able to take over systems changes and policy advocacy efforts when the SNAP-Ed LIA staff stepped away. One LIA raised a related concern when they found that, despite success in their efforts to encourage a *coalition* in which they participated to work on a joint use agreement with a local school district, the selected school district did not have a

relationship with *the LIA specifically*. This required the development of new relationships to allow the LIA to support joint-use activities with the district over the longer term.

Finally, one LIA identified a **need for additional outreach to policy-makers (ST6)** as a critical challenge in securing support, and ultimately funding, for active living efforts.

> Although research indicates people prefer to live in walkable communities with large amounts of open space, city/county officials continue to advocate for fast-moving streets with less walkability and bikeability. Also, this tends to be the less expensive avenue so it takes even more convincing to push through complete streets and other important built environment policies."

In all PSE areas, but particularly active living, where momentum is still building in Arizona, making change is a complicated balancing act. SNAP-Ed LIA staff find that they must understand the interests in their communities related to the active living environment, and then package those interests in a way that also appeals to decision-makers at local, regional, and state levels. Those decision-makers may have multiple, competing priorities, so the meta-challenge is to provide education to decision-makers that aligns with multiple priorities, and emphasizes the ways in which ***active living improvements in lower-income areas have multiple benefits.*** SNAP-Ed LIA staff who provide consistent messaging and information to decision-makers can prime them for when a window of active living opportunity opens.

ACTIVE LIVING POLICY
KEY FINDINGS AND RECOMMENDATIONS

- LIAs built on the relationships they developed in FFY16 with government agencies, community groups, and SNAP-qualified sites, and in FFY17 expanded their active living policy work to strengthen coalitions, encourage systems change at sites, engage in policy advocacy, and view active living policy work through a health equity lens.
- LIAs should continue to build on success in both strengthening coalitions and driving coalition priorities, seeking to influence decision-makers to view active living policy issues (such as improved walkability and the value of open space) more favorably.
- Using the progression of PSE changes (Figure AL-1) as a guide, LIAs should strive to meet sites where they are in terms of site-level systems changes, and encourage physical activity through multi-level interventions that may ultimately evolve into stronger PSEs.
- As active living policy work is established, LIAs should consider focusing their efforts on including additional community members in the policy process and/or advocating for health equity through active living policy.
- Information should continue to be provided to LIAs about sources of funding for infrastructure improvements that may be targeted at lower-income communities; both small and larger grants may be useful in advancing active living policy goals.*

  * Recurring recommendation from FFY16

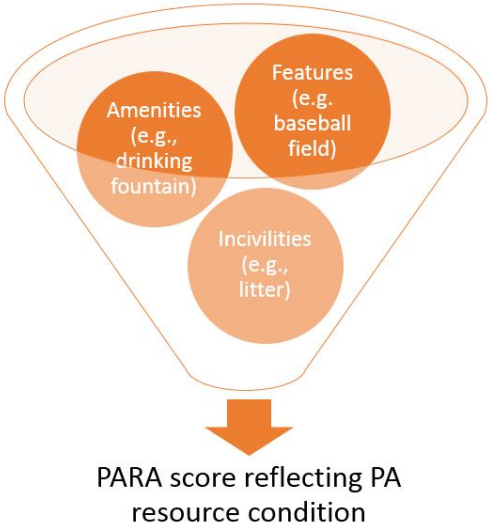
Promotion of Physical Activity Resources

Methods

The AZ Health Zone State Evaluation Team (SET) evaluated Promotion of PA resources at the *partner site level* using mixed methods analysis with three data sets: information collected from the Physical Activity Resource Assessment (PARA), and the semi-annual SARTs and SARNs completed by LIA staff.

Lee and colleagues designed the Physical Activity Resource Assessment (PARA), first published in 2005, to assess the condition of physical activity resources.[6] The PARA was developed to measure the built environment at locations such as parks, sports facilities, trails, community centers, and schools. Key strengths of the tool for use with SNAP-Ed in Arizona in FFY17 were: 1) its focus on the built environment at the site vs. participant *use* of the site, and 2) its brevity and flexibility (a one-page form that could be done in any season, at any time of day, and in the presence or absence of site users). The PARA also aligned with environmental settings as a key level of change in the SNAP-Ed intervention model, and also meshed with LIA workplans in seven counties which involved working with sites to improve PA resources, including parks, trails, and recreation centers. Figure AL-2 illustrates the types of elements assessed by PARA – features, amenities, and incivilities.

Figure AL-2. Elements Comprising a PARA Score



More specifically, the tool asks a rater to decide, based on consulting a rubric, whether a feature (e.g., baseball field) present in a park or sport facility is in good, mediocre, or poor condition. Figure AL-3 shows an example of the rating rubric.

Figure AL-3. Example of Rating Rubric for a Baseball Field

Feature	1 - Poor	2 - Mediocre	3 - Good
8) Baseball Field	Surface of fields is uneven, unsafe, no overhead lighting, no benches for players, fencing in poor condition or nonexistent	Surface of fields is uneven, slightly unsafe, no overhead lighting, + benches for dugouts. Some fencing existent, but not 100% intact	Surface of fields is uniform, no rocks/barriers to running bases, have overhead lighting, + benches for dugouts. Have bleachers for spectators, intact backstop fencing

SNAP-Ed LIA staff were trained by the SET in the use of the PARA through a one-hour webinar that walked through the tool and showed multiple examples of PARA elements in poor, mediocre and good condition. Staff were encouraged to consult with colleagues or SET members (including photos when appropriate) to ensure the most accurate reporting of physical activity resource features, amenities and incivilities.

The maximum PARA score is 75; however, due to the variability of characteristics inherent to the diversity of PA resources measured in the tool, this score is not a useful benchmark in itself. To make PARA findings more usable, the SET calculated, based on statewide SNAP-Ed PARA data:

- The percentage of resources that contained a particular element (for example, how many large parks had a soccer field, a shaded picnic table, or graffiti).
- The average condition score awarded to the element (ranging from 1 to 3, with 3 representing *best* condition for features and amenities and the *worst* condition for incivilities).

Parks, the most common type of resource assessed, were categorized by LIA-reported size in order to improve comparability across park types.

The SART, completed by LIA staff in all 15 counties, was subject to quantitative analysis in Excel. From the SART, the SET collected information on process indicators including sites reached, types of sites, and number of planning meetings with partners.

In addition to the quantitative analysis, the SET conducted qualitative inquiry using text from LIA SARNs. NVivo v.11.0 software facilitated coding and theme analysis. We considered findings in terms of LIA strengths and challenges in the promotion of PA resources. Across the Promotion of PA resources strategy, the SET documented ways in

which LIAs were building readiness and capacity (ST5), engaging in partnerships (ST7), and increasing physical activity and reduced sedentary behavior supports (MT6).

Results

PARA Tool

Eleven LIAs in ten counties completed a total of 71 PARA assessments. Parks made up 62% of assessed resources. Table AL-3 indicates average scores for different types of resources assessed across the three categories – features, amenities, and incivilities. If incivilities were many and features and amenities were few/poor, it was possible to achieve a negative PARA score. As resources increased in size, their feature and amenity scores typically rose – trails were the exception, as there were generally few features available on a trail except for the trail itself. Incivility scores among resources assessed were not dependent upon resource size – generally speaking, larger parks were better kept than smaller ones. Combination park & sport facilities, typically with more amenities than other resource types, also garnered the highest incivility scores. FFY17 represents the baseline year for assessment of PA resources around the state, so scores reflect the selection of SNAP-eligible locations where there is the potential to make improvements to increase physical activity and reduced sedentary behavior, and/or improve community design and safety for residents (MT6, MT10).

Table AL-3. Average PARA scores, FFY17 by Resource Type

Type of Resource[b]	N	Mean Feature Score	Mean Amenity Score	Mean Incivility Score	Total Score[a]
Small Park	9	8.8	21.0	5.3	24.4
Medium Park	11	11.5	23.8	5.5	29.9
Large Park	24	17.8	26.6	3.3	41.0
Trail	5	4.0	7.2	6.0	5.2
Large Community Center	1	21.0	28.0	2.0	47.0
Small School	1	5.0	11.0	4.0	12.0
Park with Community Center	6	9.7	23.3	4.3	28.7
Park with Sport Facility	8	18.3	26.0	6.6	37.8
Enhanced Park with Sport Facility	6	20.2	22.8	4.5	38.5
All Resource Types	71	12.9	21.1	4.6	29.4

[a] Total score = (features + amenities) – incivilities [b] Small park< ½ square block; medium park >½ sq. block and < 1 sq. block; large park > 1 sq. block

Tables AL-4 through AL-6, below, show results for PARA features, amenities, and incivilities in all parks assessed in Arizona in FFY17. Results for other resource types (trails and combination resources) are found in Appendix C, PARA Data Tables for Trails and Combination Resources. Two resources with non-comparable characteristics were not included in the tables. The tables indicate *what percentage of assessed resources* around the state had particular types of features, amenities, and incivilities, and the *mean score* for each type of feature, amenity, or incivility. Orange bars represent small parks (N=9), blue bars indicate medium parks (N=11), and black bars represent large parks (N=24).

Table AL-4. PARA Scores for Features at SNAP-Ed Assessed Parks, FFY17

Features	Percent of Parks Where Feature Is Present	Mean Score of Feature in Parks (out of 3.0)
Baseball Field	22%	1.5
	36%	2.5
	54%	3.0
Basketball Court	67%	2.7
	64%	2.9
	79%	3.0
Soccer Field	0%	N/A
	18%	3.0
	46%	2.8
Bike Rack	0%	N/A
	18%	3.0
	25%	3.0
Exercise Station	22%	1.5
	9%	3.0
	17%	2.8
Play Equipment	100%	2.9
	82%	2.4
	100%	2.9
Pool >3 ft deep	11%	3.0
	18%	3.0
	29%	3.0

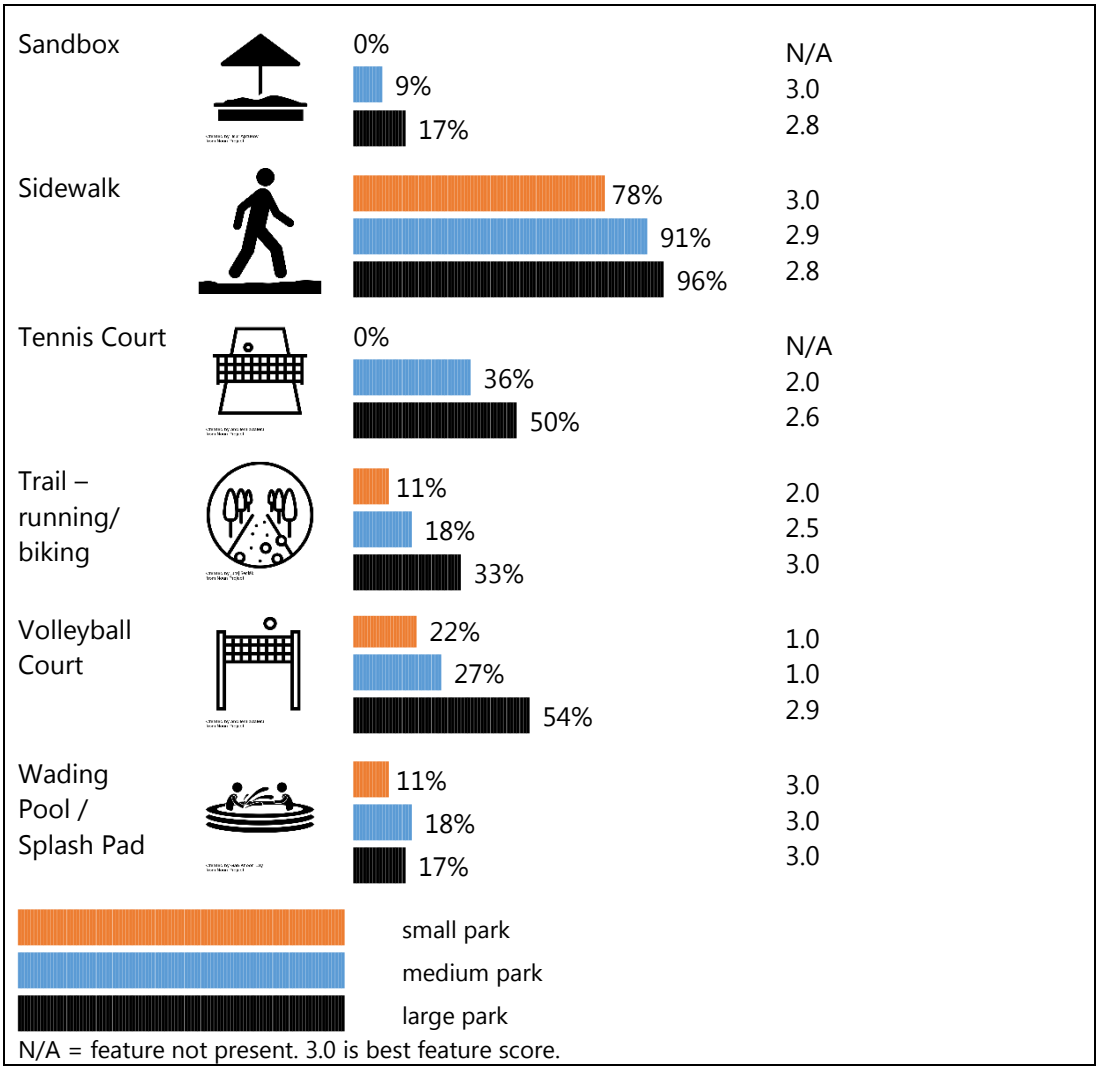
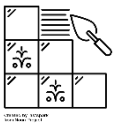
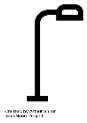
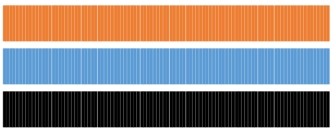


Table AL-5. PARA Scores for Amenities at SNAP-Ed Assessed Parks, FFY17

Amenities		Percent of Parks Where Amenity Is Present	Mean Score of Amenity in Parks (out of 3.0)
Access Point		89% 100% 100%	2.5 2.9 2.8
Bathroom		44% 64% 71%	2.5 2.7 2.6
Bench		89% 100% 100%	2.9 2.9 2.8
Decorative Art		11% 9% 21%	3.0 2.0 3.0
Drinking Fountain		89% 73% 88%	2.8 2.5 2.7
Landscaping		100% 91% 100%	2.1 2.8 2.8
Lighting		100% 100% 100%	2.2 2.9 2.8
Picnic Table, Shaded		78% 73% 96%	2.6 2.8 2.9
Picnic Table, Not Shaded		22% 45% 54%	3.0 3.0 2.9
Shelter/ Ramada		78% 82% 96%	3.0 3.0 3.0

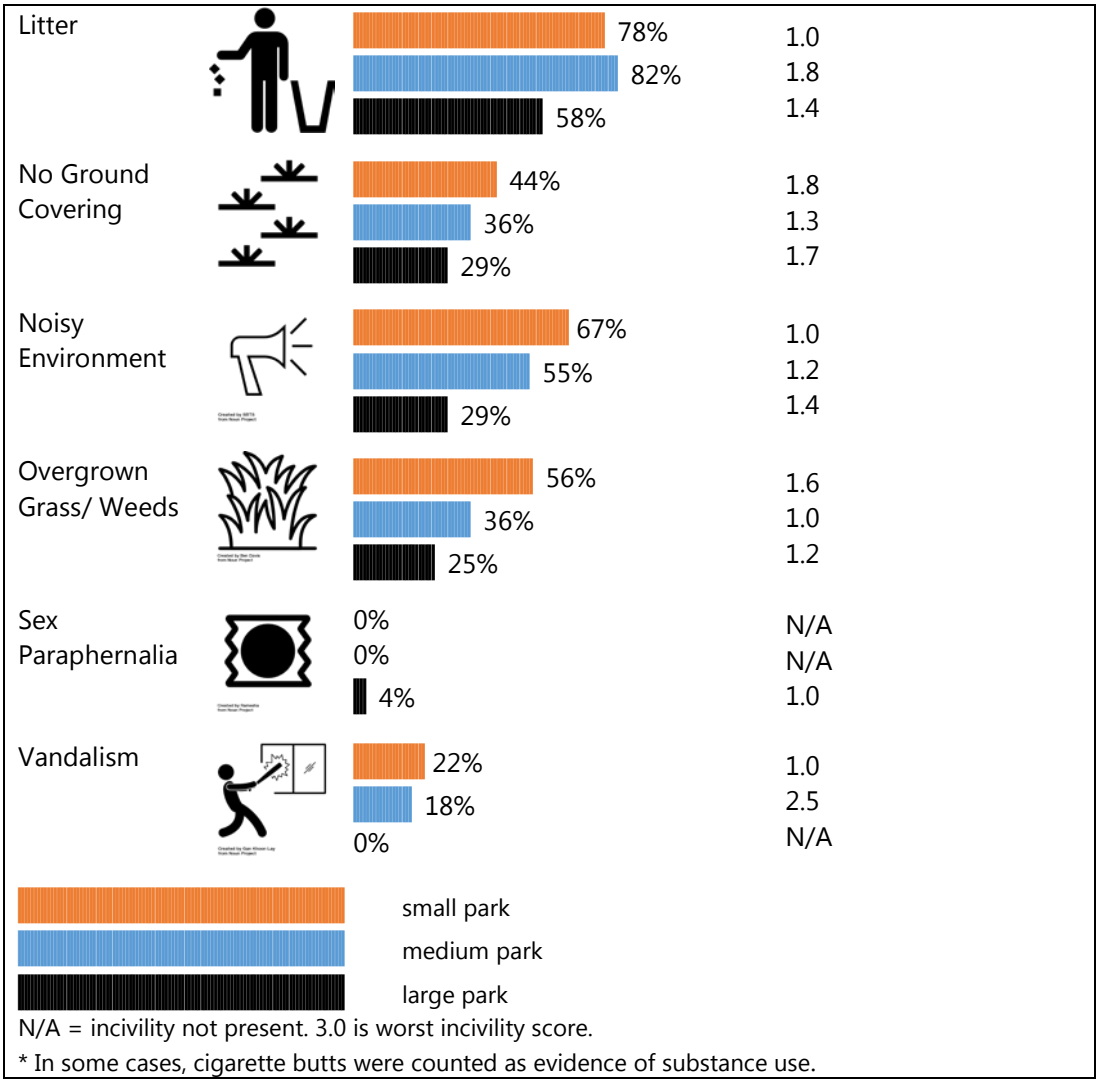
Shower/ Locker Room		0% 9% 13%	N/A 3.0 3.0
Trash Container		100% 91% 100%	3.0 3.0 3.0



N/A = amenity not present. 3.0 is best amenity score.

Table AL-6. PARA Scores for Incivilities at SNAP-Ed Assessed Parks, FFY17

Incivilities		Percent of Parks Where Incivility Is Present	Mean Score of Incivility in Parks (out of 3.0)
Broken glass		11% 36% 25%	1.0 1.5 1.7
Dog Refuse		11% 27% 21%	1.0 1.3 1.4
Dogs Unattended		0% 0% 0%	N/A N/A N/A
Evidence of Alcohol Use		33% 27% 17%	1.0 1.3 1.3
Evidence of Substance Use*		22% 18% 4%	1.0 1.5 1.0
Graffiti		56% 36% 33%	1.0 1.5 1.1



N/A = incivility not present. 3.0 is worst incivility score.

* In some cases, cigarette butts were counted as evidence of substance use.

In parks, the number and condition of features and amenities generally increased with park size, but more incivilities were present in small and medium-sized parks. For trails, LIA staff mainly rated amenities and incivilities. In a few cases, trails had other features, such as bike racks or exercise stations. Features missing from the table were not reported for any trail. Among amenities, only access points and benches were associated with more than one trail. For incivilities, graffiti, litter, and noise were problematic on more than one trail. See Appendix C for trails tables.

Twenty-eight percent of assessed resources were combinations, including a park and some other PA resource, such as a community center or sport facility. Combination Park

& Sport Facilities were more likely to include exercise stations, play equipment, tennis courts and wading pools/splash pads. Feature and amenity conditions for Enhanced Combination Park & Sport Facilities tended to be rated lower compared to Combination Park & Sport Facilities. Although Combination Park & Sport Facilities had better-condition features and amenities, they also had the highest level of reported incivilities, both in terms of having a higher percentage of incivilities present and higher (worse) condition scores. See Appendix C for results related to features, amenities and incivilities documented at these combination sites.

As SNAP-Ed efforts shift toward settings and sectors level across the Socio-Ecological Model to affect PSE changes, the PARA is a useful tool to engage in conversations with relevant stakeholders about how to increase PA levels in low-income communities.

PARA resource comparisons by type and size can also inform LIAs' efforts to improve their PA resources (advocating for additional amenities or a reduction in incivilities, or seeking to improve condition scores). Conversely, if PA resources were in good condition, the results can support efforts to advocate for systems changes such as regularly occurring programming aimed at the SNAP-eligible audience at these facilities. Also, by analyzing PA resource characteristics across the state, the SET was able to see patterns of resource quality to better support LIA staff in their efforts to promote participation in and use of physical activity resources. By asking LIAs to complete PARA assessments in FFY17 and again at the same locations in FFY19, the AZ Health Zone will be able to assess changes in the features, amenities, and incivilities of these PA resources across time and statewide, and the ways in which these changes may specifically support an improved physical activity environment.

Interaction with Partner Sites

Reach and Meetings with Partner Sites. In FFY17, eleven LIAs in ten counties reached an average of 11.2 sites, although with Maricopa removed from analysis, the average across counties was five sites reached. To promote PA resources, LIAs engaged with varying types of sites. In some cases, they worked together with a town, coalition, or sites where they offered youth or adult education to promote multiple PA resources in a geographic area. In other cases, they promoted specific free or low-cost resources, most often

parks and trails. Table AL-7, below, summarizes findings from the SART analysis for promotion of PA resources in FFY17.

Table AL-7. Indicators for Promotion of PA Resources, FFY17

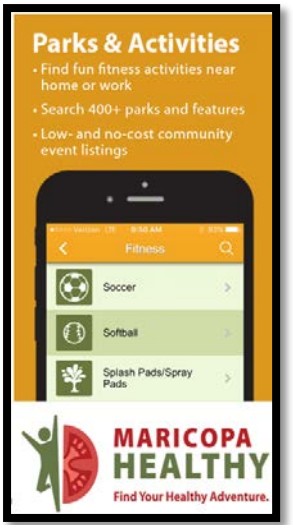
COUNTY	No. Sites Reached	Types of Sites	No. Planning Meetings with PA Partners
Apache	4	Towns	5
Coconino	3	Towns, coalitions	0
Gila	2	Shared-use school, trail	2
Graham	1	Park	5
Maricopa	67	Parks, Youth and adult education sites	29
Mohave	3	Parks, trail	2
Navajo	3	Towns	5
Pinal	15	Adult education sites	10
Santa Cruz	10	Parks, trails, community center	7
Yavapai	4	Towns	22
Mean, All Counties	**11.2**		**8.7**

Strengths in Promotion of PA Resources

LIAs reported four main strengths in their narrative reports: 1) Preparing to make use of PARA data, 2) disseminating PA flyers, maps, and an app, 3) strong partnerships, and 4) encouraging park and trail use with community support.

Preparing to Make Use of PARA Data (ST5). As a result of completing PARA assessments in FFY17, three LIAs began the process of building relationships and holding meetings with neighborhoods, parks and recreation departments, and local coalitions to prepare to utilize the PARA data.

Disseminating PA Flyers, Maps and an App. In addition to the three LIAs for which this type of PA promotion was a strength in FFY16, three additional LIAs developed flyers and maps in FFY17 to guide SNAP-eligible program participants to free or low cost PA resources, such as the Maricopa Healthy app, at right.



The Maricopa Healthy app promotes healthy eating and active living opportunities in the county.

Strong Partnerships (ST7). Building on the FFY16 strength of developing partnerships, five LIAs were involved in local partnerships or collaborations to advance goals around participation in and use of PA resources. Partnerships included a consortium focused on complete streets work, a partnership with a local high school to build and install bike racks locally, a partnership with a local agency to install walking path signage and trail markers in two parks, a group focused on improving a local trail, and revitalization of efforts to improve the condition and utilization of trails across a county.

> "Our LIA is a member of a 13-partner consortium that has received a grant focused on Complete Streets for our town. The intended outcomes of this initiative are to transform the two primary thoroughfares (state highways), install bike lanes and signage, and develop routes that would connect neighborhoods, schools, and key business areas."

Encouraging Park and Trail Use with Community Support. LIAs sought to encourage park and trail use in a variety of ways, which connected to other active living strategies and in one case, a food systems strategy. Table AL-8, below, summarizes these initiatives and related strategies by county.

Table AL-8. Promotion of PA Resources Initiatives and Related Strategies, FFY17

COUNTY	Initiative	Related strategies
Apache	Encouraged park use before and after summer meal service at a park	Summer food service program
Gila	Reconvened a trails committee	Family friendly PA
Maricopa	Took part in park clean-ups	Family friendly PA
Mohave	Collaborated with the Bureau of Land Management to update trail resources Started a walking club in a park	Family friendly PA
Yavapai	Expanded a successful hiking club to the other side of the county	Family friendly PA

Challenges in Promotion of PA Resources

Lack of Infrastructure Funding. As in FFY16, LIAs promoting PA resources described the lack of community financing available to support suggested infrastructure changes. In FFY17, LIAs specifically mentioned lack of funding for trails, parks, complete streets, and other infrastructure.

"[A challenge is] the ongoing need to identify infrastructure grant funding opportunities for trail efforts in our county. This will be critical to maintaining the momentum and interest of the reconvened committee."

Increased Community Engagement. LIAs discussed reaching out to both community partners and SNAP-eligible community members to expand the reach of their active living work. They were successful in doing so in FFY17 with *cross-sector stakeholders* such as city officials, representatives from parks and recreation departments, and school district staff. In terms of SNAP-eligible *community member* involvement, however, most LIAs were still at an initial stage of exploring community members' perspectives on active living issues.

PROMOTION OF PA RESOURCES

KEY FINDINGS AND RECOMMENDATIONS

- LIAs completed 71 PARA assessments, with large parks the most common type of resource assessed. Results show LIAs how their PA resources compare to the SNAP-Ed PARA averages for features, amenities, and incivilities, and may guide LIAs and their partners in developing action plans to improve PA resources.
- Follow up LIA activities to address PARA findings may include: meeting with the entity that controls the resource and creating an action plan to address particularly low scores, or reaching out to SNAP-eligible individuals with programming or other ways in which they can use resources in good condition.
- For LIAs that have not documented PA resources accessible to SNAP-eligible individuals in their communities, performing such an inventory may help to promote existing resources and/or identify gaps. Accessible includes: the resources exist; they are accessible by foot, car, and/or public transportation; they are free or low-cost; and they are physically appealing and culturally relevant.*
- LIAs may consider seeking community input on effective ways to promote PA resources and internally evaluating the effectiveness of their efforts to promote particular resources to relevant audiences.

*Recurring recommendation from FFY16.

Family-Friendly Physical Activity

Methods

To evaluate SNAP-Ed support for family-friendly PA throughout the community, the SET used quantitative analysis of the SART and the SNAP-Ed Education and Administrative Reporting System (EARS) using Excel. Although EARS was recently revised by the USDA, the data in this report were collected in FFY17 using the previous EARS system. The SET used the SART to collect data on process indicators, including sites reached and the number of planning meetings with partners. From EARS, the SET collected the number of PA opportunities conducted with youth and adults, the reach of those events, and whether the LIA was involved in sponsoring/hosting the event (when such information was available). We filtered monthly report data to capture direct and indirect events reaching ≥ 20 people, primarily focused on PA, and did not utilize a curriculum.

NVivo v11.0 software facilitated qualitative analysis of SARN text. Findings were considered in terms of LIA strengths and challenges with respect to family-friendly PA programming in the community.

Considering both quantitative and qualitative data, the SET assessed readiness and capacity for family-friendly PA programming (ST5), organizational partnerships that supported such events (ST7).

Results

Physical Activity Event Reach. After reporting successes in FFY16 with planning and/or participating in family-friendly PA events, 13 LIAs in 11 counties continued to make progress in this area in FFY17 (Table AL-9). LIAs reached an average of 9.5 communities (range of 1 to 60) per county with family-friendly PA events in FFY17, comparable to the 9.1 communities reached (range of 1 to 66) in FFY16. The wide range in both years reflects the fact that communities were LIA-defined, often geographically but in some cases by particular target demographics or particular sites. An additional measure was added to the SART in FFY17, asking LIAs to report the number of events

for which their staff were on the organizing or planning committee. These numbers showed that LIAs helped to organize, on average, 7.2 PA events per county, with three counties helping to plan more than 15 site-based or citywide events during FFY17.

Walkers at the Lake Havasu Hunger Awareness Walk in Mohave County.

Table AL-9. SNAP-Ed Family Friendly PA Events by County, FFY17

COUNTY	No. Communities Reached	No. Events LIA Planned or Organized	Highlights
Cochise	3	4	Cochise Strong Families Event
Coconino	7	18	Spring into Summer Walking Challenge
Graham	1	15	5K Run and Family Fun in the Mud
La Paz	6	4	Get Out and Play Day
Maricopa	60	3	Phoenix Food Day
Mohave	4	6	Hunger Awareness Walk
Pima	9	17	Cyclovia open streets event
Pinal	4	4	Get Out and Play Day
Santa Cruz	2	1	Fix-2-Own Bike Class
Yavapai	2	5	Mayor's Ride
Yuma	7	3	Family Fun-stival
Mean, All Counties	9.5	7.2	

Tug-of-War at the Family Fun-stival in Yuma County.

While most family-friendly PA events occurred annually or semi-annually, one LIA helped to organize and promote a 100-day walking challenge that encouraged residents of two small communities to be more active.

"The [Spring into Summer] campaign encouraged all residents of the town to register and commit to walking at least 1-mile a day for the next 100 days, record progress on a chart, and submit for a quarterly reward. For each neighborhood in the area, a one-mile loop map was created and distributed. Some participants commented on challenging themselves to "walk" every map. The campaign attracted over 250 participants who walked over 4,000 recorded miles."

Reach of Family-Friendly PA Events

Although the SART and SARN provided detailed narratives about some events, they often did not address the extent to which family-friendly events reached adults. Given the variety of other avenues for SNAP-Ed programming to reach youth through school health, early childhood and youth direct education, adult participation in family-friendly PA events is a key SNAP-Ed metric in Arizona. To gain more information, the SET examined LIAs' EARS reports. LIAs reported 58 DE events that reached 6,239 individuals, with an average of 96 individuals reached per event (range of 20 – 1,138). Although the number of events was larger in FFY17 (58 versus 38), all but three of the events took place at schools, as compared to FFY16 where a wider range of site types hosted events, including senior sites, community centers, libraries, public housing sites and SNAP offices. Compared to FFY16, when only 16% of direct PA events reached adults, LIAs improved in FFY17, reporting 24% of direct PA events as reaching adults.

LIAs also reported 69 indirect education events focused on PA that reached an estimated 19,465 individuals. The average number of individuals reached per event was 282, with a range of 20 – 3,000. Estimates indicated that 19 events reached 300 or more

individuals. Because indirect activities rely on an estimation of total participation without demographic counts, the number of adults reached by these efforts is unknown. Of the 69 reported events, 24 were sponsored by SNAP-Ed LIAs. This represents an increase in sponsorship of events compared to FFY16 (35% in FFY17 versus 27% in FFY16).

A Strength in Family-Friendly PA

Collaborative events that addressed multiple SNAP-Ed focus areas**.** Building on the FFY16 strength of partnerships, nine LIAs described events that they took part in, helped plan with other organizational partners, or both (ST7). For LIAs engaged in event planning, the partnership was typically at the coordination level.

> "The "Walk to the Farmers' Market" event took place at two senior and residential housing sites after the Farmers' Market 101 lesson, which followed the *Eat Healthy, Be Active* class series. The senior participants engaged in 30 minutes of walking and learned about nutritious options and how to "double-up their SNAP dollars" at their local farmers' market."

Of 16 events highlighted in narrative reports, 12 overlapped with other SNAP-Ed focus areas, including: five with food systems, two with school health, two with early childhood, and three with direct education opportunities. This focus on collaborative events and multiple focus areas meant that LIAs had increased capacity (ST5), and could rely on a broader array of partners for help in all facets of event development and accomplishment. It also enabled LIAs without a history of strong active living connections to begin active living PSE work, building a network that will enable them to move into stronger site and community-based PSEs in the future.

A Challenge in Family-Friendly PA

Building community support (ST5). Five LIAs found that while they were able to participate in or host successful family-friendly events in a certain area of their county, in

> "Collaborative efforts between our LIA and members of the community, including the homeowners association, elementary school teachers, and food bank leadership have begun to identify community needs. We are just in the beginning stages, but there is interest in developing a walking trail and community garden that will help support community-wide physical activities."

other communities they still needed to engage in relationship-building to be able to replicate the success of their events in a new setting. This was particularly true in rural and tribal communities where LIA staff were new faces. These LIAs continued to seek out like-minded partners in those new communities, however, and worked hard to overcome barriers. They did this by consistently showing up to events when invited, seeking out individuals and organizations to serve as local healthy living champions, identifying the most valuable media outlets to use in publicizing events, and informing community partners of their enthusiasm for helping with planning and implementation of family-friendly PA events.

FAMILY-FRIENDLY PA
KEY FINDINGS AND RECOMMENDATIONS

- Moving beyond a focus on building partnerships, LIAs have expanded their family-friendly PA offerings and demonstrated more involvement in the planning process for these events at both the city and site levels.
- Although the percentage of events reaching adults increased in FFY17, the AZ Health Zone could provide guidance and technical assistance to LIAs on how to reach more adults within communities to interest them in participating in PA events.*
- LIAs may wish to investigate longer-term PA campaigns to extend the reach of one-day events and mobilize larger audiences to engage in family-friendly PA more consistently.

* Recurring recommendation from FFY16.

Point of Decision Prompts for Use of Stairs

Methods

One LIA selected the strategy to encourage use of stairs with Point of Decision (POD) prompts.

Quantitative analysis of the SART in Excel was used to evaluate POD prompts for use of stairs. The SET collected information on *process indicators*, including sites reached and number of meetings with site leadership (ST5), and *short term outcome indicators,* including number of sites with POD prompts for use of stairs by the end of FFY17 (MT6).

Congratulatory message for using stairs in Yavapai County.

Results

In FFY17, the participating LIA intended to expand the reach of this intervention from three sites to five (ST5). A local hospital refused to hang POD signage, leaving four sites reached. However, one of the four sites never hung provided POD signs, so the installation of POD prompts for use of stairs was limited to three sites (MT6).

Table AL-10. POD Prompts for Use of Stairs, FFY17

COUNTY	Sites Reached	No. Meetings with Site Leadership	No. Sites with POD Prompts for Stairs
Yavapai	4	3	3

Multi-level Intervention Highlights

Encouraging Active Living in Pima County. The University of Arizona Cooperative Extension, Pima (Pima Extension) excelled in multi-level interventions to advance active living goals at the individual, site, and community level. At the individual level, Pima Extension offered 30 class series to adults, primarily the six-lesson series Eat Healthy, Be Active, which has a focus within each lesson on increasing physical activity. At the settings level, Pima Extension was involved in supporting their partner sites to schedule and promote regular, ongoing physical activity opportunities for their participants. In some cases, this involved providing equipment, such as hand weights, to sites, and helping them set up an inventory management system for these items. In other cases, Pima Extension staff connected sites with local PA instructors. These efforts led to discussions about developing written policies at partner sites to encourage ongoing PA. At the community level, Pima Extension staff were active in several Tucson coalitions and working groups. With one community coalition, they were able to share results of a neighborhood walkability audit, and began to improve walkability in the community. This included addressing the appeal of outdoor PA through animal control and increased tree planting for sidewalk shade. With another working group, Pima Extension staff approached a local school district about joint use, encouraging them to open their school facilities after-hours to community members.

Adult education at a Pima County site.

"We have been able to leverage the successful implementation of past physical activity classes and events into discussions on the development of written policies supportive of active living at 13 partner sites."

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Image/Icon credits

Image of adult education in Pima County courtesy of the community center website: https://www.tucsonaz.gov/parks/FredArcherCenter

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School Health

Background

School policies, systems and environments (PSEs) can considerably influence students' energy balance-related health behaviors.[1,2] School health initiatives may be shaped by district-level Local Wellness Policies (LWPs) in top-down fashion, while other factors such as school health champions, family and community support, or access to resources can also affect schools' nutrition and physical activity PSEs. Therefore, in order to have a comprehensive understanding of school health interventions in Arizona's SNAP-Ed-qualified schools, it is important to evaluate both the district-level LWPs and the school-level PSEs.

In FFY16, the AZ Health Zone assessed the quality of district LWPs among Arizona's SNAP-Ed-qualified districts in order to support the development, implementation, and evaluation of LWPs in collaboration with Local Education Agencies (LEAs). During FFY17, school health evaluation moved to the level of the individual SNAP-Ed-qualified school to gain a better understanding of school health programming.

Figure SH-1. The Healthy Schools Program Six-Step Process

The Alliance for a Healthier Generation's evidence-based Healthy Schools Program (HSP)[3] works to prevent childhood obesity in the U.S. Specifically, the HSP supports changes to school-based nutrition and physical activity PSEs using a six-step process (Figure SH-1). *Step 2: Assess Your School* uses the HSP assessment tool to measure school-level nutrition and physical activity initiatives. Schools that complete the assessment and score high across sections can apply for national recognition in the form of bronze, silver, and gold award status.

In FFY17, the AZ Health Zone developed a Memorandum of Understanding (MOU) with the Alliance for a Healthier Generation's HSP, which enabled sharing of the HSP assessment data for all Arizona schools working with Local SNAP-Ed Implementing Agencies (LIAs). For LIAs working with SNAP-Ed partner schools that were not enrolled in the HSP, the AZ Health Zone's State Evaluation Team (SET) developed an alternate form of data collection. Together, these data were used to evaluate LIA progress in the School Health focus area across three AZ Health Zone strategies:

- ***Local Wellness Policies***. Support the development, implementation, and evaluation of nutrition and physical activity LWPs in collaboration with Local Education Agencies (ST7, MT5, MT6).
- ***Nutrition Capacity***. Improve student, teacher, and staff access to nutrition information through menu labeling and classroom curriculum to improve student understanding of nutrition information (MT5).
- ***Comprehensive School Physical Activity Programming.*** Support Comprehensive School Physical Activity Programming (CSPAP) (MT6).

Methods

This FFY17 assessment serves as: (1) a site-level evaluation of school health PSEs to provide actionable information to the AZ Health Zone, LIAs, and partner schools, and (2) the baseline for an FFY19 outcomes evaluation.

Assessment Tools. An FFY17 MOU with the HSP made HSP data available to the SET for SNAP-Ed-participating schools. LIAs with interest or experience in supporting

schools' participation in the HSP were notified if HSP assessment data was available. For LIAs working with non-HSP schools, the SET provided an alternative evaluation tool: The HSP's evidence-based **National Healthy Schools Award Checklist (NHSAC)** was used by LIAs to collect quantitative data related to school-level nutrition and physical activity PSEs. This six-section checklist is a set of criteria that define a healthy school environment and is published in the Alliance for a Healthier Generation's HSP *Framework of Best Practices*.[4]

Regardless of whether LIAs completed the full HSP assessment or the simplified NHSAC with their schools, all resultant data were converted into NHSAC form to compute standardized scores.

Data Collection. LIAs working in school health were trained to collaborate with school representatives to complete the NHSAC as follows:

- LIAs working with LWPs completed all six sections, i.e., the full NHSAC.
- LIAs working specifically to promote nutrition education using classroom curricula only completed the *Health Education* section of the NHSAC.
- LIAs working specifically to promote CSPAP only completed the *Physical Education and Other Physical Activity Programs* section of the NHSAC.
- LIAs working with schools that completed the HSP assessment between 1/1/16 and 9/30/17 were not required to complete NHSACs; instead, the HSP data was obtained directly from the Alliance for a Healthier Generation and converted into complete NHSACs for participating schools.

Data Analysis. The yes/no NHSAC checklist responses were tallied into total and by-section numerical scores by assigning one point per yes and zero points per no. Because each section varies in length and maximum point assignments depend upon the grade levels in each school, point scores were standardized by converting into percents (points scored/maximum achievable points). Section and total mean scores were calculated for all schools, schools stratified by HSP versus non-HSP participation, and schools stratified by counties with low (Apache, Cochise, Gila, Graham, Greenlee,

Mohave, Navajo, Pinal, Santa Cruz, Yavapai) verses higher (Coconino, Maricopa, Pima) employment. The employment-level subgroup analysis served as a rough proxy for lower and higher resourced counties in Arizona and relied on the USDA's Economic Research Service's 2015 county-level designations of low employment.[5]

To further explore schools' ability to meet NHSAC-related best practices, the number of schools achieving overall and by-section gold status was calculated using the HSP definition: gold status is achieved when the school implements every item in a given section. Thus, section scores of 100% were used to identify gold status.

The two-sample Wilcoxon rank sum test was used to perform all subgroup analyses, including the comparison of NHSAC scores for HSP versus non-HSP schools and schools in low- versus higher-employment counties. Alpha values were set at 0.05 for significance. Excel 2016 was used to calculate basic descriptive statistics, and Stata MP v15 was used for all subgroup analyses.

Limitations. Limitations to the quantitative analysis included the yes/no nature of the checklist, which did not allow schools to receive credit for PSEs that were partially in place. Also, LIAs may have interpreted NHSAC items differently despite the training they received, as some items are more subjective than others. Similarly, school representatives completing HSP assessments may have varied in their interpretations of assessment items. The low employment county designations were used as proxies to determine differential access to resources and tended to track with degree of rurality. However, within-county variations were not included in the analysis, which could influence findings.

Results

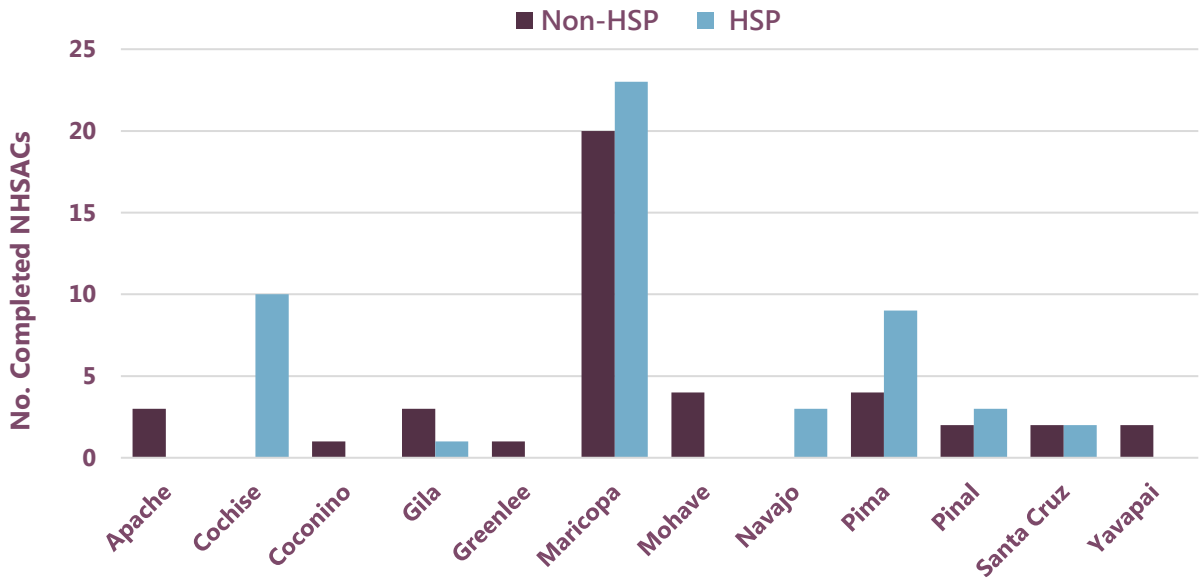
Of the 102 NHSACs completed in 13 of Arizona's 15 counties, 93 were full assessments; two were the *Health Education* section, only; and seven were the *Physical Education and Other Physical Activity Programs* section, only (Table SH-1).

Table SH-1. Number of NHSACs Completed by County in Arizona, FFY17 (N=102)

County	Total	Full NHSAC	HE Section	PEPA Section
Apache	3	3	0	0
Cochise	10	10	0	0
Coconino	1	1	0	0
Gila	4	4	0	0
Graham	1	0	0	1
Greenlee	1	1	0	0
Maricopa	43	43	0	0
Mohave	7	4	1	2
Navajo	6	3	0	3
Pima	13	13	0	0
Pinal	7	5	1	1
Santa Cruz	4	4	0	0
Yavapai	2	2	0	0
All Counties	**102**	**93**	**2**	**7**

NHSAC: National Healthy Schools Award Checklist, HE: Health Education, PEPA: Physical Education and Other Physical Activity Programs

Figure SH-2. Number of Full NHSACs by Type[a] and County, FFY17 (N=93)

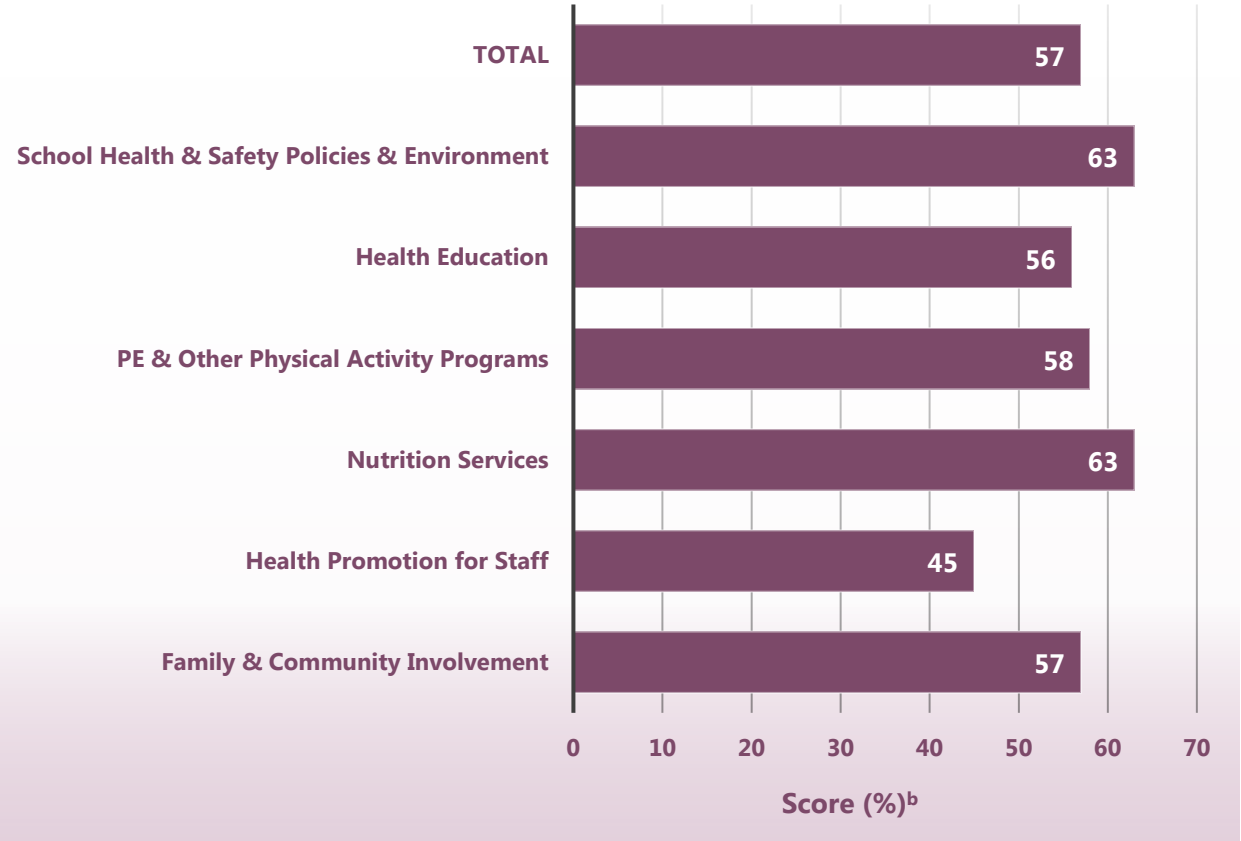


NHSAC: National Health Schools Award Checklist. [a] HSP: The State Evaluation Team used secondary data from the Healthy Schools Program (HSP) assessment and completed the NHSAC on behalf of the Local Implementing Agency (LIA); Non-HSP: LIA staff worked directly with school representatives to complete the NHSAC.

Fifty-one (55%) of the full NHSACs were completed via the HSP assessment (Figure SH-2). In some cases, the LIA worked directly with schools to support their completion of the HSP assessment, whereas other schools received little to no support from the LIA in completing the HSP assessment.

***Total and Section Scores for All Schools* (ST7, MT5, MT6).** Mean NHSAC scores across all participating schools are reported in Figure SH-3. The highest mean scores were found for the *Nutrition Services* and *School Health and Safety Policies and Environment* sections (63%), while the lowest mean score was found for the *Health Promotion for Staff* section (45%).

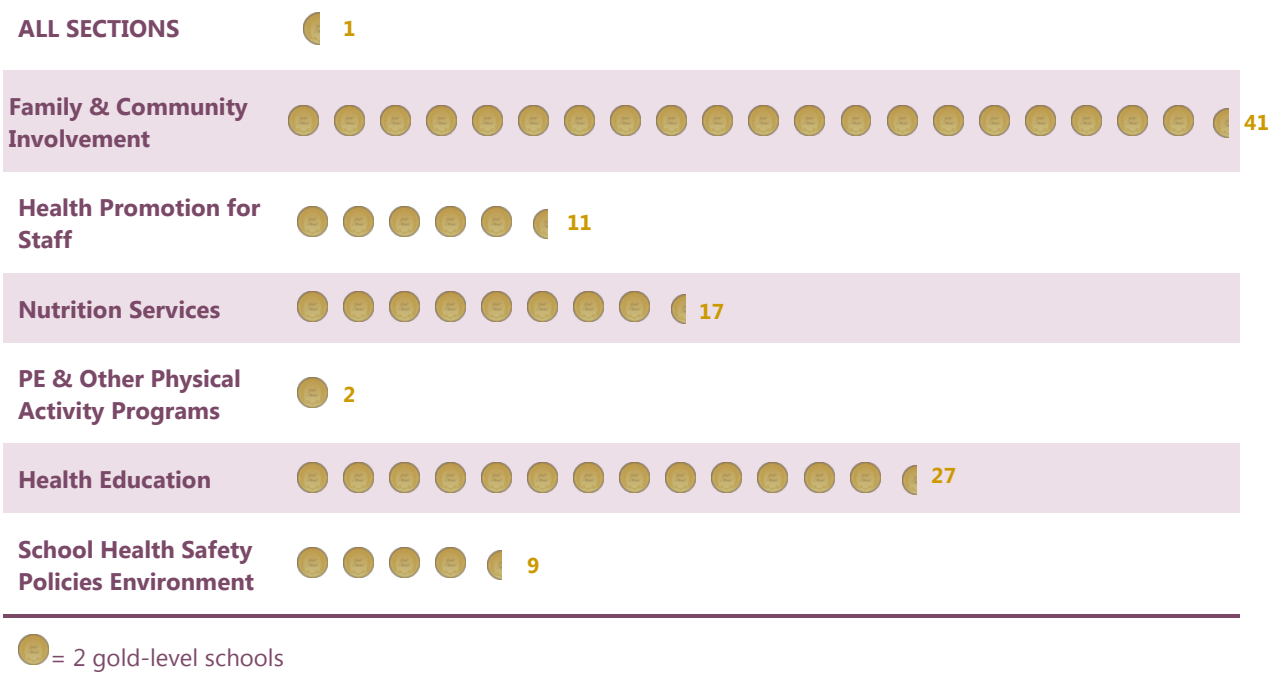
Figure SH-3. Mean Total and Section NHSAC Scores, FFY17 (N=93[a])



[a] N=93 for all sections except *Health Education* (N=95) and *PE & Other Physical Activity Programs* (N=100). [b] Scores are reported as percents (points scored/ maximum possible points).

The number of schools that were able to achieve gold status varied widely by section and ranged from two to 41 (Figure SH-4). Only one school attained the maximum possible scores across all sections. This low overall attainment of gold status was, in large part, due to the relatively low achievement in the *Physical Education and Other Physical Activity Programs* section. Schools often fell short of the gold-standard amount of physical education (PE) provided to students (150 per week for elementary schools, and students required to take PE every year for middle and high school students). There was also a relatively high number of items required in the *Physical Education and Other Physical Activity Programs* section (12-15). Conversely, the relatively high mean score for *Family and Community Involvement* and success of schools in achieving gold status in that area was likely related, at least in part, to the low number of section items (3).

Figure SH-4. Number of Schools Achieving NHSAC Gold Status, by Section



Interestingly, despite the relatively low mean score for *Health Promotion for Staff,* 11 of 93 schools (11.8%) attained gold status in that section. Findings revealed that schools

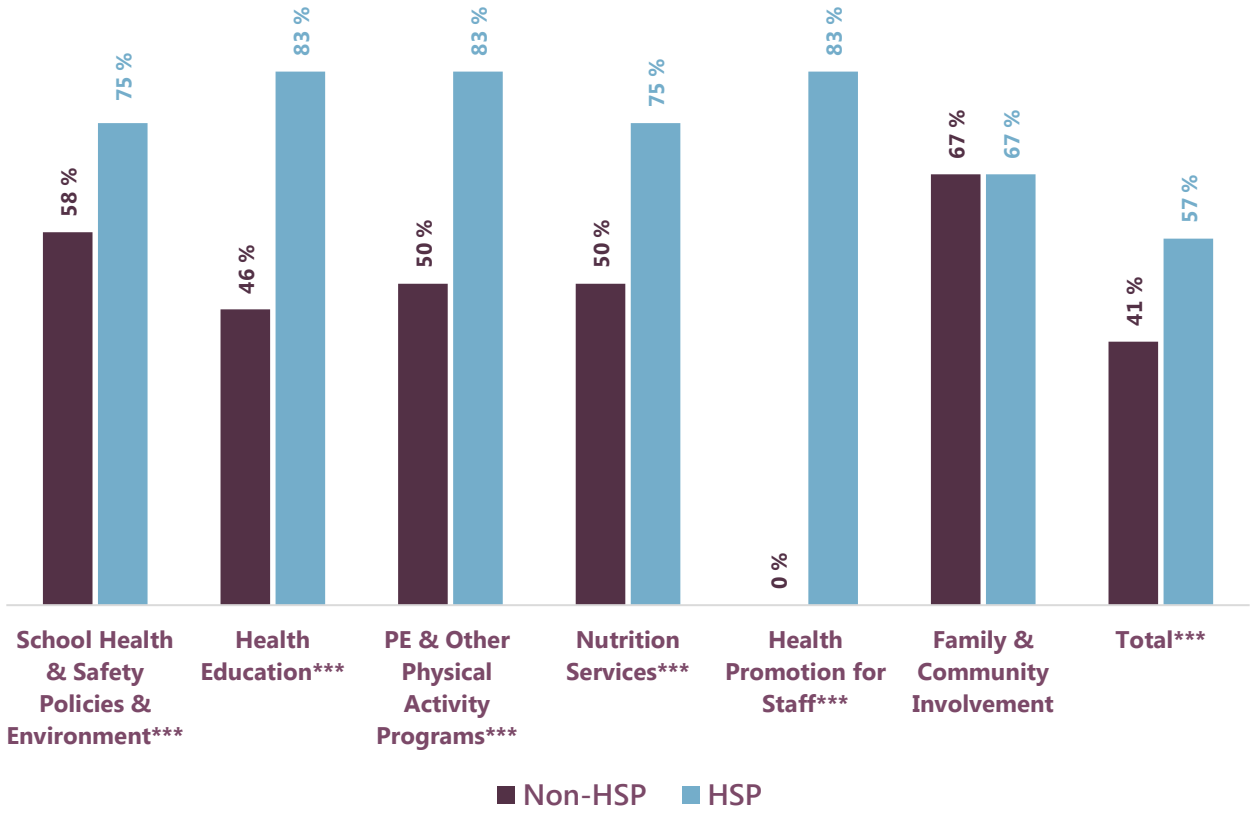
with *any* staff wellness programs tended to achieve silver or gold status, while the lower mean score was influenced by schools that had no staff wellness activities at all.

Schools interested in national recognition at any HSP award level must actively apply to the Alliance for a Healthier Generation and achieve bronze, silver, or gold status across *all* HSP sections. In 2017, 30 Arizona schools earned a National Healthy Schools Award. Twelve were SNAP-Ed-participating elementary schools, 18 were non-SNAP-Ed-participating elementary schools, and all were located in Mesa, AZ.[6] We attribute the success of these schools to the district-wide implementation of the Mesa Public Schools' Elementary Physical Education Program.[7]

HSP versus non-HSP Schools. When NHSAC scores were grouped by involvement in the HSP, a clear association emerged of higher scores with HSP participation (Figure SH-5). HSP schools scored significantly higher in all sections except for *Family and Community Involvement*. The most notable difference was in the *Health Promotion for Staff* section: while non-HSP schools had a median score of 0% and (mean score of 21%), HSP schools had a median score of 83% (mean 64%).

An interesting question related to these findings is whether HSP schools scored higher because of their participation in the HSP, or whether schools that chose to participate in the HSP were more apt to already have more school health activities in place. Both factors likely influenced the overall difference in scores, however further investigation is warranted to better understand those influences. Moreover, the LIA's role in facilitating the HSP-school relationship is not yet clear. In some cases, LIAs had little to no involvement in the FFY17 HSP assessment process. In other cases, LIAs participated in the HSP assessment; and in still other cases, the LIA played a central role in linking the school to the HSP and the subsequent assessment. Future systematic tracking of the LIA's role supporting HSP involvement would improve understanding of the part played by SNAP-Ed LIAs in advancing school health initiatives.

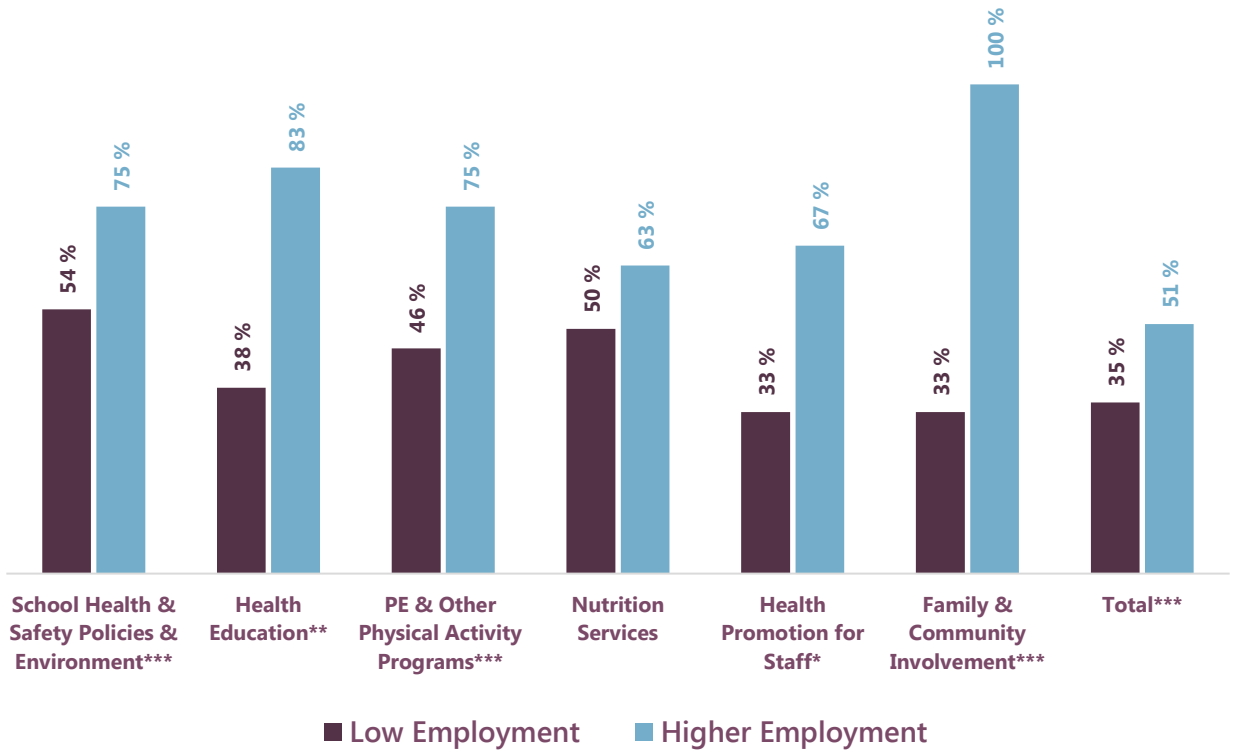
Figure SH-5. Median Section and Total NHSAC Scores, by HSP Participation[a] (N=93)



NHSAC: National Health Schools Award Checklist. [a] 51 schools participated in the Alliance for a Healthier Generation's Healthy Schools Program (HSP) assessment; 42 schools did not participate in the HSP (Non-HSP) and completed the NHSAC by working directly with LIA staff. *** Wilcoxon rank sum test revealed statistically significant difference with $p<0.001$ between non-HSP and HSP schools.

Low versus Higher Employment Counties. The SET also analyzed NHSAC scores by stratifying schools by their location in counties with low versus higher employment. Here, a clear association emerged of higher scores for schools in higher employment counties (Figure SH-6). Schools in these counties scored significantly higher in all sections except for *Nutrition Services*. The most notable difference was in the *Family & Community Involvement* section: while schools in low employment counties had a median score of 33% (mean score of 38%), schools in higher employment counties had a median score of 100% (mean 72%).

Figure SH-6. Median Section and Total NHSAC Scores, by School Location in Low vs Higher Employment Counties[a] (N=93)



NHSAC: National Health Schools Award Checklist. [a] 36 schools were located in low-employment counties (Apache, Cochise, Gila, Graham, Greenlee, Mohave, Navajo, Pinal, Santa Cruz, Yavapai); 57 schools were located in higher-employment counties (Coconino, Maricopa, Pima). Wilcoxon rank sum test revealed statistically significant differences between the two groups: *p<0.05, ** p<0.01, *** p<0.001.

This analysis was performed at the county level, which does not account for differential employment within counties. Some cautious interpretations of these findings are provided below.

- *Nutrition Services* may be sufficiently regulated and/or supported by the National Breakfast and Lunch Programs, so that disparities are reduced among differentially resourced schools.
- *Family and Community Involvement* may be easier to promote in well-resourced areas, more urban areas (the higher employment counties are also home to the three major metropolitan centers in Arizona), or both. For example, higher

employment rates or closer family proximity to schools may enable better communication than in low employment areas or rural areas. Also, closer proximity to schools may encourage the development of programming such as joint use agreements that allow family and community access to school facilities outside of school hours.

- Schools in the low employment counties may have less overall support for any non-essential educational activities. Barriers to school health may include fewer school staff, less funding (e.g., no designated grant writer), transportation challenges (especially in rural areas), fewer training opportunities, and more limited access to facilities.

***Presence of an Active School Health Advisory Committee* (ST7).** An active School Health Advisory Committee (SHAC) provides a forum for advancing school health initiatives among the school community, and provides a natural partner for LIAs as they reach out to schools. The very first NHSAC item addresses the existence of an active SHAC: "School has a representative committee or team that meets at least four times a year and oversees school health and safety policies and programs." More than three quarters (78.5%) of schools that completed this NSHAC item reported having an active SHAC. HSP participation was likely central to SHAC development, as schools benefit from convening a team to work through the HSP process (Figure SH-1). However, regardless of whether the initial SHAC was developed in conjunction with the HSP, out of a school's internal initiative, or from working with a SNAP-Ed partner, the reported widespread existence of active, school-level teams is encouraging in that they can provide LIAs with a means by which to collaborate and communicate regularly.

***Classroom Curricula to Improve Access to Nutrition Information* (MT5).** As a PSE strategy, LIAs can provide trainings for school staff (usually teachers) on AZ Health Zone-approved curricula. The *Health Education* section of the NHSAC provides an excellent measure of success in this area: Section items capture whether standards-based, behaviorally-focused health education is in place at schools at all grade levels, what essential topics are covered, and whether professional development for teachers is provided. In FFY17, 27 of 95 schools (28%) that completed this section achieved perfect scores (Figure SH-4), and on average, schools implemented over half of all the

section items (56.3%). Scores were far higher in schools that participated in the HSP (Figure SH-5) and in schools that were located in high employment counties (SH-6). This suggests that access to health education resources is vital to institutionalizing a health education program at schools that includes professional development and the school-wide adoption of standards-based curricula. Given SNAP-Ed's familiarity with a variety of behaviorally-focused, AZ Health Zone-approved, and standards-based curricula, LIAs are well poised to fill this need by providing teacher trainings and information regarding free and low-cost curricula that align with other academic standards. This support is especially needed in lower-resourced schools.

***CSPAP* (MT6).** The *Physical Education and Other Physical Activity Programs* section of the NHSAC covers the amount and type of PE in place at schools at all grade levels, professional development of staff, active transport, before and after school programs, recess, physical activity breaks for students, and community involvement in school-based physical activity. In FFY17, only two of 100 schools (2%) that completed this section achieved perfect scores (Figure SH-4). However, on average schools implemented over half of all the section items (58%), and the difficulty in achieving gold status was likely due to the large number of section items and the progressive requirement for greater amounts of PE at each level (bronze, silver, and gold). In fact, 31 schools (31%) achieved bronze status for this section, where the minimum amount of weekly PE is only 60 minutes per week for elementary students and one semester of PE for middle and high school students. Section scores were significantly higher in schools that participated in the HSP (Figure SH-5) and in schools that were located in high employment counties (SH-6). This, like *Health Education*, suggests that access to PE and physical activity resources is vital to institutionalizing CSPAP at schools. As Arizona's LIAs become increasingly familiar with a variety of methods to address CSPAP, their services may prove critical to developing CSPAP in lower-resourced schools. Specifically, LIAs who are unable to address PE programs can target the "other physical activity" elements of the NHSAC to promote physical activity opportunities throughout the normal and extended school day.

Summary of Findings. A summary of NHSAC findings by section is provided below.

STRONGER

Nutrition Services

- Mean NHSAC score was high relative to other sections
- 18% of schools earned perfect (gold-level) scores
- Higher scores were associated with HSP participation
- Relatively high scores were independent of county employment rates

Family and Community Involvement

- Mean NHSAC score for this section was on par with other sections
- 44% of schools earned perfect (gold-level) scores
- Scores were independent of HSP participation
- Higher scores were associated with higher county employment

School Health and Safety Policies and Environment

- Mean NHSAC score was high relative to other sections
- 10% of schools earned perfect (gold-level) scores
- Higher scores were associated with HSP participation
- Higher scores were associated with higher county employment

Health Education

- Mean NHSAC score for this section was on par with other sections
- 28% of schools earned perfect (gold-level) scores
- Higher scores were associated with HSP participation
- Higher scores were associated with higher county employment

Health Promotion for Staff

- Mean NHSAC score for this section was low relative to other sections
- 12% of schools earned perfect (gold-level) scores
- Higher scores were associated with HSP participation
- Higher scores were associated with higher county employment

Physical Education and Other Physical Activity Programs

- Mean NHSAC score for this section was on par with other sections
- Only 2% of schools earned perfect (gold-level) scores
- Higher scores were associated with HSP participation
- Higher scores were associated with higher county employment

WEAKER

A Brief Comparison with FFY16 District-Level Findings. The NHSAC sections somewhat align with the sections used to assess LWP quality, enabling comparison. Some interesting patterns are revealed when district-level (FFY16) versus school-level (FFY17) strengths and weaknesses are compared (Table SH-2).

Table SH-2. A Comparison of Arizona Health Zone's School Health Assessment Findings from FFY16 (District-Level) and FFY17 (School-Level)

Section	District vs. School-Level Comparison
Nutrition Education	• LWP scores were very high in FFY16 • 28% of schools achieved HSP gold status in FFY17
School Meals	• LWP scores were relatively weak in FFY16 • 18% of schools achieved HSP gold status in FFY17 • NHSAC scores were relatively high in FFY17
Competitive Foods & Beverages[a]	• LWP scores were relatively weak in FFY16 • 10% of schools achieved HSP gold status in FFY17
Physical Education and Physical Activity	• LWP scores were relatively weak in FFY16 • Only 2% of schools achieved HSP gold status in FFY17
Wellness Promotion and Marketing[b]	• LWP scores were relatively weak in FFY16 • NHSAC scores were relatively weak for *Health Promotion for Staff* in FFY17, 17% of schools achieved HSP silver status for *School Health and Safety Policies and Environment,* and 12% of schools achieved HSP gold status for *Health Promotion for Staff*
LWP Implementation, Evaluation, & Communication[c]	• LWP scores were relatively high in FFY16 • 44% of schools achieved HSP gold status in *Family and Community Involvement*, and 51% of schools achieved HSP bronze status in *School Health and Safety Policies and Environment* in FFY17

[a] The silver and gold sections of the NHSAC's *School Health and Safety Policies and Environment* match most closely with the LWP items for this section, so gold status is used here for comparison. [b] The NHSAC's *Health Promotion for Staff* and *School Health and Safety Policies and Environment* silver sections match most closely with the LWP section items. [c] The bronze section of the NHSAC's *School Health and Safety Policies and Environment* and the complete NHSAC's *Family and Community Involvement* section match most closely with the LWP items for this section.

In general, Arizona's SNAP-Ed-participating schools and districts appear to be relatively strong in promoting health education (MT5), however school-level implementation of comprehensive, standards-based curricula at all grade levels is not as strong as district policies often require. The implementation of LWPs and communication with families (MT5, MT6) also appear to be an overall strength, while CSPAP (MT6) emerges as a weakness common across districts and schools. Another weak area spanning both the district and school level is wellness promotion and marketing (MT5, MT6), although schools that do address this area tend to do so comprehensively. Interestingly, written LWPs scored low in school meal standards and nutrition standards for competitive foods and beverages, however schools appear to be implementing USDA guidelines and other best practices in these areas (MT5). This difference may be partly due to recent federal legislation calling for greater adherence to the USDA's Smart Snack Standards for competitive foods and beverages. Also, school meal standards may be absent from written LWPs but adhered to in other school and district policies due to the USDA's oversight of the National School Breakfast and Lunch Programs.

Implications of Findings. State-level implications of the findings reported here are related to interagency coordination, LIA trainings on targeted topics, and the continued involvement of the AZ Health Zone in the HSP.

CSPAP. The AZ Health Zone has already prioritized physical education and other physical activity programs by developing a dedicated school health strategy for CSPAP. Nonetheless, Arizona schools continue to struggle with implementing and sustaining PE and other physical activity programs. Specifically, PE in schools from K-12 tends to fall far short of the National Association for Sport and Physical Education (NASPE) recommendations (150 minutes of weekly instructional PE for elementary school students and 225 minutes for middle and high school students). Interagency coordination to enhance state-level requirements for proving minimum minutes of weekly PE could have far-reaching, positive effects in Arizona. Moreover, schools in counties with low employment appear to struggle disproportionately with CSPAP. Coordination at the state agency- and local agency-levels could include: transportation supports (e.g., families in more rural or lower resourced areas may be unable to transport students to and from extracurricular physical activities), facilities supports

(e.g., mapping community facilities for joint use by schools), facilitating connections to community partners (e.g., distributing contact lists for schools with LIAs and other community partners who may provide free physical activity programs), and dedicated CSPAP funding (for hiring PE teachers, purchasing equipment, etc.).

LIA Training. The findings reported here underscore the need for LIAs to receive training focused upon: (1) school staff wellness promotion, including the critical role that staff play in modelling behaviors for students, (2) CSPAP that can be implemented in lower-resourced or more rural areas, and (3) how to support school participation in the HSP. Moreover, the AZ Health Zone may wish to communicate with the Mesa Public Schools elementary PE program to learn more about their successful approach to CSPAP.

The Healthy Schools Program. Not surprisingly, schools that participated in the HSP attained higher scores on the NHSAC. That said, the difference in scores between non-HSP versus HSP schools was striking for all but one section. These results bolster the AZ Health Zone's decision to engage in an MOU with the Alliance for a Healthier Generation and provide LIAs with HSP trainings in FFY17. In the future, the AZ Health Zone may wish to track how LIAs use the HSP with schools, capturing information such as whether the LIA played a pivotal role in the school's HSP participation, what support the LIA provided during any HSP assessments, and what support the LIA provided beyond the assessment step of the HSP process.

Deep Dive: A Case Study of the AZ Health Zone's Model for Assessing Local Wellness Policies

In October 2015, the AZ Health Zone piloted a new model for assessing LWPs (Figure SH-7) that prioritized (1) low burden on participating SNAP-Ed-eligible school districts and LIAs and (2) use of findings by districts and state and local agencies. In FFY17, the AZ Health Zone SET formatively evaluated that model by investigating LIA experiences during the pilot period. We explored the interactions of the LIAs with other stakeholders within the LWP system and examined the contextual variation in which different LIAs operate, including: geographical differences; district capacity, sociopolitical history, and health-related culture; the local agency's capacity and approach; and the relationship of each of these to one another. Our objectives were to determine LIAs' perceptions of the model's feasibility and utility, understand the barriers and facilitators to using the model, and identify characteristics associated with varying degrees of successful policy assessment.

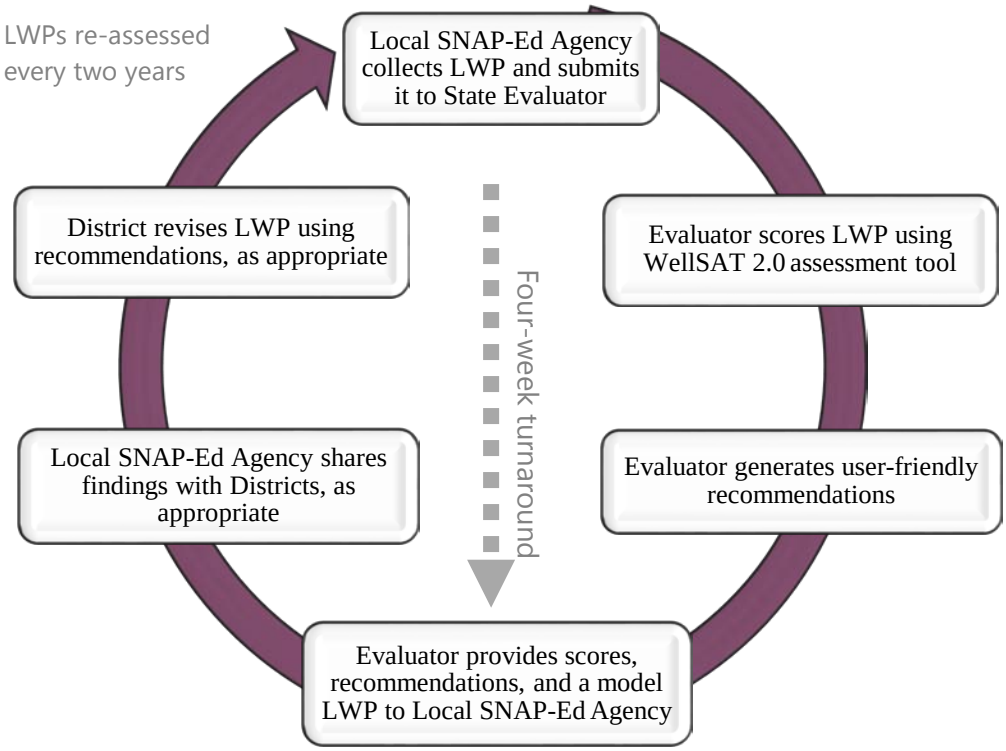


Figure SH-7. AZ Health Zone Model for Assessing Local Wellness Policies (LWPs)

Methods. To gather information-rich cases from local agencies across the state, we combined criterion and maximum variation sampling strategies.[8] Criterion-based sampling was used to identify key informants who were involved in each phase of the LWP assessment process (Figure SH-7). To maximize the heterogeneity of responses, all staff meeting this criterion were invited to participate. This enabled the identification of central themes pervading all agency experiences and the exploration of contextual variation by geography and other factors.

Participants. Thirteen LIAs met the study criterion: eight cooperative extension units and five county health departments across 11 of Arizona's 15 counties. LIAs were asked to confirm which staff members were actively involved in all LWP assessment phases for targeted recruitment, however inclusion was not based upon level of LWP experience. We achieved maximum heterogeneity, conducting 13 interviews (30-60 minutes) with 15 LIA staff across 11 counties. Eleven were phone interviews, and two were in person.

Data Collection. We used open-ended semi-structured interviews to explore LIA staff experiences with the LWP assessment model. A standardized script ensured interviews covered the same topics and included a series of questions covering general perceptions of the statewide LWP assessment process, experience with each phase, what they learned if anything from the process, and any opportunities that resulted from their participation in LWP assessment. The interviewer recorded verbatim responses in real time by typing shorthand into the script. Responses were translated back to longhand immediately following the interview.

Data Analysis. After data collection, Word documents for all interviews were imported into NVivo v11.0 software for coding and theme analysis by the interviewer and a second SET member. Using constant comparative analysis,[8] we reviewed interviews to develop grounded (emergent) codes and refined those codes with iterative review. Our sensitizing framework for analysis centered on these questions:

- How did LIAs perceive the LWP assessment model in terms of feasibility and utility?
- What characteristics were associated with different levels of success in implementing the process?

Emergent themes were considered in terms of commonalities and contextual variation and included an exploration of stakeholder interactions within the LWP system.

Results. All local agencies found the model feasible to implement. Participants generally attributed feasibility to the SET having performed the actual LWP assessment using the Rudd Center for Food Policy and Obesity's WellSAT 2.0 tool.[9] Almost all interviewees also described the model as useful, citing the quick (four-week) turnaround time to receive results and customized recommendations as the most useful aspects of the process.

Table SH-3. Themes Associated with Local SNAP-Ed Agencies' Success in Implementing the Local Wellness Policy (LWP) Assessment Process

Less Successful ⟷ More Successful	
Local Agency Staff Comprehension	
• Misrepresented LWP assessment process • Did not seek clarification • Poor understanding of LIA role in LWP assessment	• Accurately portrayed LWP assessment process • Proactively sought information • Understood LIA role in LWP assessment
Degree of Openness to the LWP Assessment Process	
• LIA staff averse to trying LWP process • District/school averse to LWP review or revision	• LIA staff identified value in LWP process • District/school agreeable/neutral to process
Local Agency's Engagement of District or School	
• Did not engage in each phase of LWP process • Attempted a general (non-customized) approach • Did not foster relationship with district/school	• Engaged in each phase of LWP process • Customized approach to each district/school
Coordination and Communication	
• Poor interagency coordination by local partners	• Good interagency coordination by local partners
District or School Capacity	
	• Dedicated human resources • Dedicated time for wellness

Beyond feasibility and utility, LIAs reported various levels of success in implementing the full LWP assessment process (Figure SH-7), which included making policy revisions that were presented to, and sometimes passed through, a district board. Five themes

emerged that were associated with degree of success (Table SH-3). Three themes tracked strongly with success across all agencies: ***1) Local Agency Staff's Comprehension***, ***2) Degree of Openness to the LWP Assessment Process, and 3) Local Agency Engagement of the District or School***. Coordination and Communication and District or School Capacity were recurrent interview themes, however they were not as clearly associated with success in carrying out LWP review and revision.

Local Agency Staff Comprehension. Respondents varied in how well they understood LWPs, the AZ Health Zone LWP assessment process, and their role in that process. They also differed in the degree to which they pursued more information about these topics. This theme was not associated with agency capacity, but it did track with openness of the interviewee to learning about policies and engaging in the assessment process. The most successful agencies were ones that anticipated the importance of policy work in promoting school health, valued (and referred to) the training they received on the assessment process, and were proactive in seeking more information:

> "When I first heard about the process, it was a matter of finding as much information as I could. I went to the WellSAT website, read extensively to have a better understanding of what the WellSAT was to assist my programming work. I started working on wellness policies the year before we started this, so I knew it was coming and had done a lot of research on wellness policies, and I had already started talking to districts about updating wellness policies."

Less successful LIAs were either unaware of their lack of understanding or did not seek clarification given a dearth of knowledge: *"Maybe [I could have used] more explanation about what comprehensiveness and strength scores meant. You may have covered it but in the hustle and bustle it got lost."*

Degree of Openness to the LWP Assessment Process. Numerous interviewees described district and school representatives who were reticent to revise policies because they

anticipated rejection, especially during the board approval stage. In some cases, respondents reported the LEA's fear of potential litigation:

> "Most of the districts used the ASBA [Arizona School Board Association] template for their wellness policies, and we're finding that they're really concerned about deviating at all from that language. In [one district], she made it seem like they thought that if they deviated they would not necessarily be covered in case of a lawsuit."

LIA staff often interpreted these concerns as reflecting the need for greater top-down support from state and local leadership to coordinate efforts and guide policy improvements.

Advocacy by champions such as LIA staff, district or school personnel, and other local partners for making policy improvements had a substantial influence on whether the review and revision process was completed. Examples include a district administrator who was "*all for it*," a wellness committee member who was "*very passionate about improving the policy*," and a local agency staff person who could "*feel intuitively that the policy review process was the direction we had to go*." LIA staff who were particularly receptive to the assessment model described how it benefitted their SNAP-Ed work; many portrayed the process as helping to launch or further engage wellness committees.

Local Agency Engagement of the District or School. The most successful agencies had staff who engaged the district or school early in the LWP assessment process and continued to provide support through final board approval. Early engagement included contacting LEA representatives, either for a copy of the policy or to verify that the policy found online was the correct version. One successful interviewee explained, *"[W]e verified it with the district because I wanted them to be in charge of giving me the go-ahead*."

After having received results and recommendations, agency staff who took time to review and interpret findings before sharing these with districts were generally better received:

> "I remember feeling like wow this is a lot, and then I pared it down for the partner. I'd already reviewed all of the recommendations before meeting…then we…said we'd like to get together to put these recommendations to work in an enhanced wellness policy. And with the exception of one district, who later came back and was willing to examine their policy, everyone was totally ready to start."

Once findings were shared, follow-up was vital to their use by districts or schools and was most effective when the interviewee was a member of the district or school wellness committee. The supportive role of the local agency was typified in this participant's summary of the process: "*Upon receiving results, we brought them to the next…wellness committee meeting, gave copies to everybody, and went through them step by step*."

Less successful LIAs usually failed to engage the LEA at one or more stages of the assessment process. Some did not establish early buy-in *("[I]f we could find [the LWP] easily online, we never contacted a district person*"), while others began by building relationships but did not follow through after sharing results ("*They were appreciative for any information, but whether or not they're going to use the information is another story*").

It was also important for LIAs to customize their engagement approach to each district or school. Overall, participants showed an impressive awareness of inter-district variation and how that should influence their approach. One interviewee emphasized "*learning about the district, who's the movers and shakers, knowing what each can do…talking to teachers, community leaders, just paying attention when you go into the office, what's on the counter, 'cause it gives you an idea of what's going on in the district*." Moreover, interviewees who were less successful because they attempted a broad, top-down approach appeared to have learned from their mistake: "*At this point we're in the process of making our own connections with districts without relying on the [county-level agency], so that we can be in charge of our own message*."

While LEA engagement occurred across the spectrum of rural to urban regions, we should note that the state's two most urban counties did describe more complex educational systems that often slowed progress by requiring more time and resources to move through multiple layers of bureaucracy.

Coordination and Communication. Interviewees recognized the importance of coordination and communication at the state, county, and within-district levels, however their ability to implement the assessment model was not as deeply tied to this theme. Success appeared to be most influenced by the quality of coordination at the county level. In one county, conflict between local agencies was described as creating "*non-coordination of efforts*" that confused districts, while another developed such a strong collaboration with another local organization that they developed a formal, shared process and reported, "*We partner with 12 districts. Nine were reviewed, eight did revisions, and five of the eight have gotten board approval, with others in the queue*."

District or School Capacity. All interviewees described competing demands upon school districts and lack of dedicated resources as barriers to completing the LWP assessment process. However, LIA success in actually implementing the model was only marginally associated with respondents' perceptions of financial resources, and surprisingly, competing demands on districts tracked inversely with success (i.e., LIAs who most often described competing demands upon districts tended to be *more* successful in supporting policy revisions). Instead, the two recurring facilitators of policy review and revision were (1) the presence of dedicated human resources such as a wellness committee or school health champion and (2) dedicated time provided by the LEA (e.g., via regular wellness meetings) for improving policies. Alternatively, where turnover was high, district and school capacity to focus upon LWP improvement was low, and local agencies had difficulty in maintaining progress: "*In one school, everyone is new–the teachers, the principal, etc., are all new and now we're starting all over with relationships. Sometimes no one is designated to take the place of the person who left, which has us at a standstill*."

Discussion. This formative evaluation of the AZ Health Zone model for assessing LWPs revealed that LIAs found the model feasible to implement and useful to their work, largely due to the presence of a scoring team and quick dissemination of results and user-friendly recommendations. We used systems theory[8] to better understand how local agencies navigated the statewide school health system as they sought to implement the assessment model.

A Systems Perspective. Figure SH-8 provides a visual representation of the LWP system from the local agency perspective. The central elements influencing whether policies were reviewed and revised were the local agency, the school district, and the school.

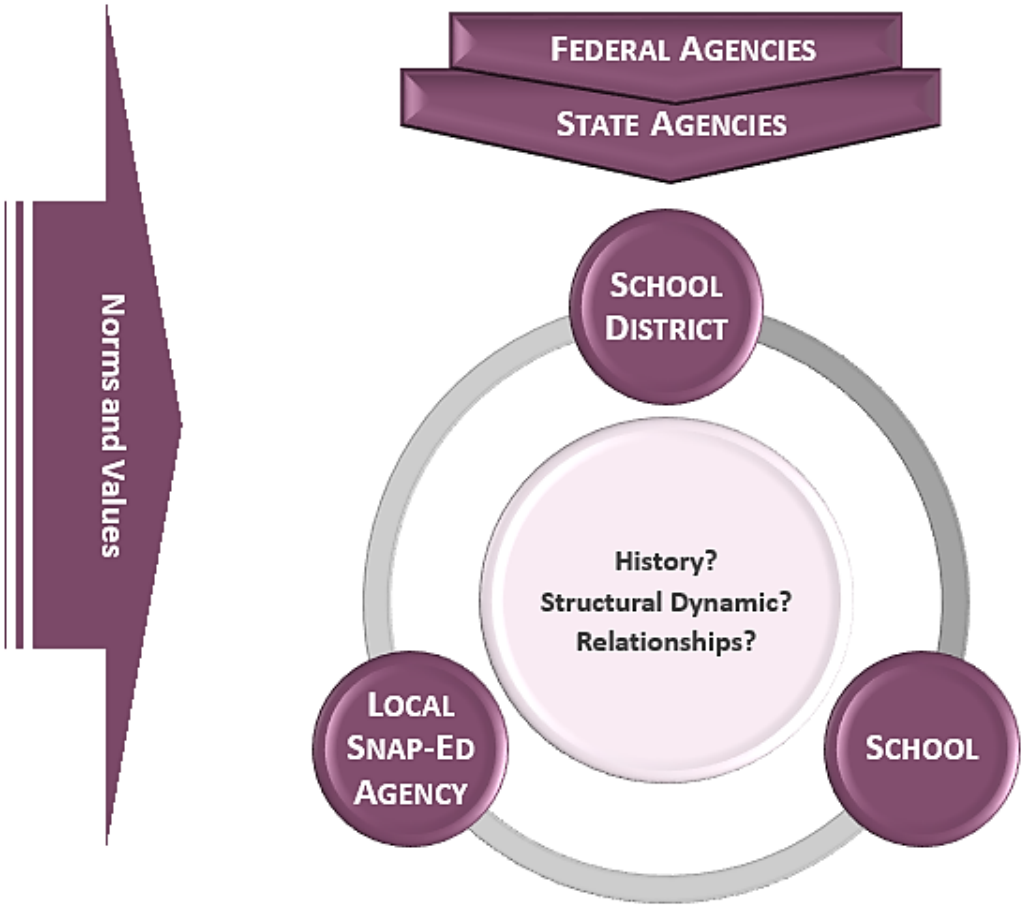


Figure SH-8: LIA Interpretation of the Arizona Local Wellness Policy (LWP) System

These were embedded in the state system, which was in turn guided by federal agencies (the USDA and the Centers for Disease Control and Prevention). Various norms and values fed into the system and were dependent upon the stakeholder group's sphere of influence and community and individual histories: Certain stakeholders (e.g., SNAP-Ed) were focused specifically upon nutrition and physical activity, while others (e.g., the Arizona Department of Education, or ADE) had a comprehensive school focus. For example, interviewees described the ADE as only monitoring policy compliance, while they saw the AZ Health Zone as concerned with LWP quality beyond compliance.

Participants were acutely aware of how state and federal leadership had influenced their interactions at the local level. Some called for stronger national or state governance related to LWPs, and many discussed the potential to leverage the USDA's Final Rule, the ADE's compliance requirements for districts, and the popularity of the Arizona School Boards Association template to accelerate LWP progress. Other researchers have likewise documented the importance of federal and state leadership: Even before the Healthy, Hunger-Free Kids Act (HHKA), Agron et al.[10] identified the critical roles that state leadership, legislation, and well-coordinated agencies play in supporting LWPs, and other researchers have reported stronger district policies and practices in states that have stronger legislation.[11-16]

System elements (Figure SH-8) were consistently identified by interviewees, while contextual variation was embedded in the *interactions* of system elements. The unique relationships, structural dynamics, and histories among groups affected participants' success and frequently varied within the same county: Where an LIA might have made impressive progress with District A, it might have made no progress with District B. One explanation is that stakeholders with various norms and values may have been differentially receptive to reviewing and revising policies. This seems even more likely when we consider that further qualitative analysis using matrix coding queries revealed that readiness to engage in the assessment process was found to be unrelated to county size, weakly associated with district or agency capacity, and strongly tied to the presence of a larger, supportive culture of school health that valued the role of the LWP. Similarly, Lucarelli et al.[17] found that a positive school health climate and high

perceived level of support correlated with a greater number of nutrition-related accomplishments in schools, and Hager[18] reported that while system *actions* generated a low level of LWP success, stakeholders' *perceptions* of system actions plus the actions themselves led to greater success. Cheung[19] found that the sustainability of school health teams was heavily dependent on district- and school-level administrative support, and Agron et al.[10] listed "long-term, top-level commitment to student health and wellness from administrators and the school board" and "a community environment that values wellness" among factors that contributed to policy success.

One particularly influential stakeholder group in Arizona was the school board. Local agencies often perceived the board as a barrier to policy improvement by blocking LWP revisions. Conversely, when a district board *was* supportive, improvements were more likely to be made and passed.

More generally, we found that the presence of any wellness champion, an active SHAC, or particularly proactive LIA staff considerably influenced the likelihood of success. This is consistent with other studies that have reported the most successful school health initiatives to be associated with the presence of SHACs, and, in some cases, intensely committed individuals.[10,18-21] In this study, dedicated human resources and time were the only elements of School or District Capacity that were strongly correlated with policy improvements. Lack of funding was addressed during multiple interviews and described as a barrier, however it did not track with local agency success in revising policies. The literature certainly supports lack of funding as a perceived barrier to school health initiatives,[15,17,19,22-24] however our findings suggest that stakeholder perceptions may not reflect the need for funding to be set aside for LWP assessment and revisions, specifically. On the other hand, budgetary constraints that lead to the general absence of or reduction in available human resources (wellness champions, SHACs) may be more detrimental to the school health climate,[16,17,23] an idea supported by our findings.

Interestingly, a number of interviewees described competing demands on districts and schools as a barrier to LWP revision, but these local agencies were also the most successful. Like funding, competing demands are regularly reported as a perceived

obstacle to school health,[17,19,22-24] and because they have the potential to adversely impact the availability of dedicated human resources, the inverse relationship found in our study was surprising. However, when we consider our project's focus upon LIAs who were specifically charged with improving school health as compared to the many priorities of the overburdened district or school, our findings may reveal just how important an intermediary agency can be to policy review and revision. As one interviewee explained, "*The…administrator actually resurrected their SHAC and had tried to do the WellSAT on their own once but were overwhelmed, so this was a big help for them*." We suggest that the LIAs who were more sensitive to limited LEA capacity found ways to leverage their role as a cost-free support and fill an existing need.

Limitations. As members of the SET, we were familiar to interviewees and had led the LWP assessment process, which may have biased their willingness to report negative perceptions of the LWP assessment process or of the AZ Health Zone in general. We took multiple steps to engender trust, making clear at the invitation and interview stages that: 1) participation was fully optional, 2) the researchers valued both positive and negative feedback to help improve the state model, and 3) names and other identifying information shared during interviews would be de-identified.

We also recognize that the LEA perspectives presented here were interpreted through the lens of the local agency. Future exploration of the statewide LWP system should include the perspectives of other state and local stakeholder groups to identify areas of concordance and dissonance across groups who likely have different perspectives on policy.

Conclusions. The AZ Health Zone LWP assessment model was determined to be feasible and useful from the local agency perspective, which is encouraging given that the local agency is one primary end user (with districts and schools being others). The five emergent themes we identified were broadly addressed by all interviewees, which suggests that they pervaded the system at multiple levels. In general, level of success and associated themes did not vary by geography; the most and least successful agencies were located in urban and rural counties alike. Instead, the likelihood that local SNAP-Ed agencies could support policy review and revision was strongly tied to:

local agency staff comprehension of the process and their role in it; openness of the local agency staff, district personnel, and school administrators to the process; and the local agency's consistent engagement of the district or school during each assessment phase.

Multi-level Intervention Highlights

Collaboration in Cochise Catalyzes the HSP. In FFY17, the UA Cooperative Extension, Cochise (Cochise Extension) galvanized two local school districts to develop active wellness committees, bringing the total number of wellness committees working with Cochise Extension to seven. Moreover, LIA staff supported the Cochise County Wellness Coordinator Program, developed by the county health department's Health in Arizona Policy Initiative (HAPI) to provide stipends for local school champions to facilitate wellness committee meetings, complete the HSP assessment, and develop and manage action plans with specific goals for school health.

> "We learned a great deal about the needs and uniqueness of our school partners through this [HSP] process…focus areas our partners selected include: establishment of SHACs, wellness events, increasing physical activity, implementing recess before lunch, increasing time to eat, increasing breakfast participation, written crisis response plan, positive school environments, and communication with families."

By learning about and promoting the HSP, Cochise Extension supported 11 local Wellness Coordinators. LIA staff provided technical assistance for completing the HSP assessment, shared program resources, and offered Wellness Coordinator trainings on the specific goals outlined in school action plans. Impressively, Cochise Extension also facilitated a county-wide HSP training on the topic of "Best Practices for Physical Education."

Because of the collaborative efforts of the Cochise Extension and the HAPI Wellness Coordinator Program, nine schools participated in the HSP assessment in FFY17, and all of these schools selected goals for an action plan for the upcoming school year.

> "[One elementary school] reported increased breakfast participation and positive outcomes of recess before lunch, including: less waste, more time to eat, and a calmer cafeteria atmosphere in general."

KEY FINDINGS AND RECOMMENDATIONS

- NHSAC results for HSP-participating schools support the AZ Health Zone's decision to engage in an MOU with the Alliance for a Healthier Generation and provide LIAs with HSP trainings in FFY17.
- While SNAP-Ed-participating schools in Arizona are generally able to implement PSEs related to nutrition services, they often struggle to implement PSEs related to CSPAP and Health Promotion for School Staff.
- To accelerate progress in LWP implementation related to PE, the AZ Health Zone may need to collaborate more deeply with the ADE or other state or federal agencies.
- In FFY18 and beyond, the AZ Health Zone should consider these LIA training topics: wellness promotion for school staff and CSPAP for more rural regions.
- In FFY18, the AZ Health Zone should encourage LIAs to proactively seek LWP information by providing trainings and access to additional LWP resources.
- In FFY18, the AZ Health Zone should encourage LIAs to communicate with districts and schools during all stages of the LWP assessment process.

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Early Childhood

Background

Early Childcare Education centers (ECEs) can have a profound impact on the eating and activity patterns of young children (Figure EC-1). With 38% of Arizona's three- and four-year-olds enrolled in ECEs in 2015,[1] improvements in ECE policies, practices and environments have the potential to positively impact obesity rates among the very young. Given the state's 13.3% obesity rate for Special Nutrition Program for Women, Infants and Children (WIC)-enrolled 2 to 4 year olds,[2] such work is critical to promote wellness and reduce health-related inequities among Arizona's lower-income families with young children.

Figure EC-1. Spectrum of Opportunities for Early Childcare Education sites[3]

Early childhood supports can take a variety of forms. The Arizona Department of Health Services (ADHS) has targeted many of the opportunities shown in Figure EC-1 with

Empower and Supplemental Nutrition Assistance Program-Education (SNAP-Ed), two distinct programs operating out of the ADHS. Developed in 2010, Empower offers discounted licensing fees for childcare facilities that agree to implement 10 wellness standards.[4] Many of these standards overlap with the AZ Health Zone's three SNAP-Ed strategies in the early childhood setting; the crosswalk provided in Table EC-1 shows elements common to both.

Table EC-1. Crosswalk of Arizona's Empower and AZ Health Zone SNAP-Ed Programs

AZ Health Zone Strategy(-ies)	Empower Standard(s)	Description
Empower	1,3,4,5,6,8	AZ Health Zone promotes all Empower Standards listed
Empower, Capacity - Nutrition Education & Healthy Meals	8	Targets staff training/professional development to improve ECE capacity
Empower, Capacity - Nutrition Education & Healthy Meals	4,5	Supports or requires ECE to serve healthy foods and beverages
Empower, Capacity - Nutrition Education & Healthy Meals	6	Supports or requires ECE to serve family-style meals
Empower, Capacity-Opportunities for Physical Activity	8	Targets staff training/professional development to improve ECE capacity
Empower, Capacity-Opportunities for Physical Activity	1	Supports or requires ECE to provide PA opportunities
Empower, Capacity-Opportunities for Physical Activity	1	Supports or requires ECE to limit time spent being sedentary
Empower	1,5,6	Supports or requires ECE to provide families with educational materials

The AZ Health Zone programs are intended to support ECEs' nutrition and physical activity policies, systems, and environments (PSEs) by reinforcing relevant Empower standards, providing ECEs with training and technical assistance on how to implement best practices, and providing direct education (DE) in conjunction with PSEs at the same sites. In FFY16, the AZ Health Zone statewide evaluation revealed that ECEs were

generally doing well in serving healthy foods and beverages, however areas for improvement spanned multiple categories: written policies, family education, professional development of staff, time provided for physical activity, and family-style dining.

Below, Early Childhood medium-term (MT5, MT6) outcomes in FFY17 are reported in alignment with the National SNAP-Ed Evaluation Framework.

Methods

This FFY17 assessment serves as: (1) a mixed methods evaluation of Local Implementing Agency (LIA) progress in delivering PSEs and multi-level interventions to partner ECEs, and (2) a qualitative inquiry into early evidence for positive outcomes related to ECE nutrition and physical activity supports (MT5 and MT6).

Quantitative Analysis. Process indicators from all LIAs' end-of-year Semi-Annual Report Tables (SARTs) were compiled to examine intended versus actual reach of individual ECE sites, and the number of LIA-ECE interactions reported in SARTs was used as a proxy for the intensity of reach. When the same site was reached with more than one strategy, the site was only counted once as a unique entity reached. Conversely, meetings and trainings that occurred at the same ECE site on different dates were added together to calculate the total number of meetings and trainings with LIAs throughout FFY17 to approximate the intensity of efforts.

Qualitative Analysis. To further understand LIA progress in supporting ECEs and examine evidence for positive outcomes related to these supports, a qualitative inquiry was undertaken using data from Semi-Annual Report Narratives (SARNs). NVivo v10.0 software was used for coding and theme analysis.

Results

Quantitative Results. In FFY17, 13 LIAs worked across 12 of Arizona's 15 counties to support 60 unique ECEs (Table EC-2). While the number of ECEs targeted exactly

Table EC-2. FFY17 Local Implementing Agency (LIA) Reach in Early Childhood Setting, by County

COUNTY	ECEs Targeted[a]	ECEs Reached[b]	No. Meetings[c]	No. Trainings[d]	LIA Programming Focus
Apache	2	2	6	1	Empower, Capacity-Nutrition
Cochise	4	5	10	7	Empower, Capacity-Nutrition
Coconino	4	7	3	9	Empower
Gila	1	1	1	0	Empower
Graham	2	3	4	3	Capacity-PA
Maricopa	6	8	43	27	Empower, Capacity-Nutrition, Capacity-PA
Mohave	3	3	4	3	Empower
Navajo	4	4	9	6	Empower, Capacity-Nutrition
Pima	20	8	23	9	Capacity-Nutrition, Capacity-PA
Santa Cruz	5	4	5	4	Capacity-Nutrition, Capacity-PA
Yavapai [e]	7	14	11	6	Empower, Capacity-Nutrition, Capacity-PA
Yuma	2	1	8	2	Empower, Capacity-PA
All Counties	60	60	127	77	

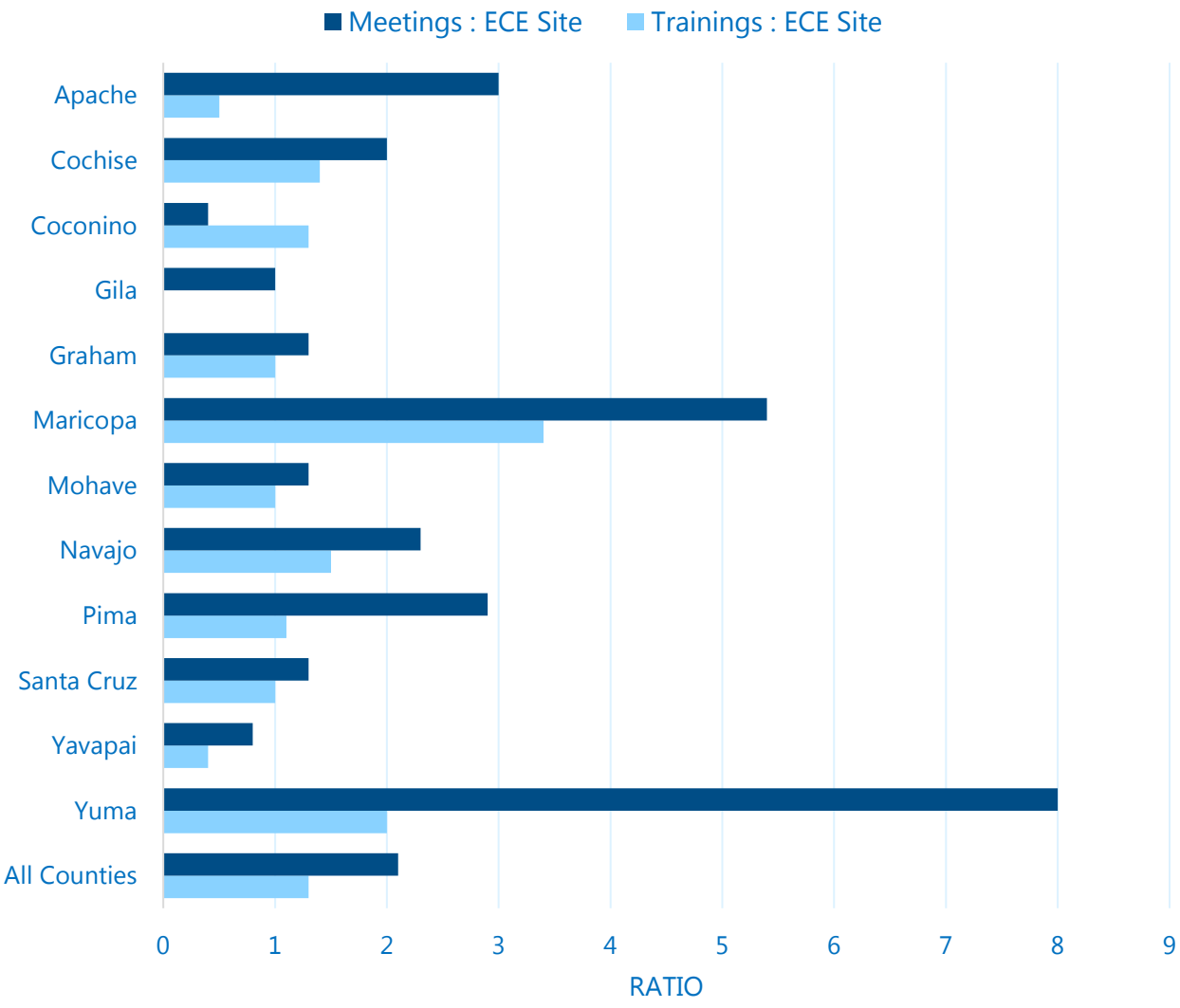
ECEs: Early Childhood Education sites. [a] Number of unique ECEs that LIAs planned to reach at the start of FFY17, [b] Number of unique ECEs that LIAs actually reached during FFY17, [c] A meeting involved attending a group gathering to discuss ECE-related topics, [d] Trainings involved providing information and/or guidance on a SNAP-Ed topic or resource to one or more people (If an activity could be counted as a meeting or a training, the LIA selected which definition fit best and only reported the activity once.), [e] Yavapai was the only county where two LIAs worked with ECEs; one LIA worked with ECEs in all other counties.

matched the number of ECEs reached, success varied by county; some LIAs met or exceeded their original goals, while others fell short. Yavapai County had the highest number of ECEs reached, due mainly to the presence of two LIAs in that county; all other counties had just one LIA working in early childhood. The two largest counties, Maricopa and Pima, saw the greatest number of meetings with ECE partners, and Maricopa also held the most trainings.

The most popular AZ Health Zone strategy used by LIAs was Empower, which includes nutrition and physical activity components (see Table EC-1). Thus all but one county had the opportunity to address both nutrition and physical activity in their FFY17 programming; Graham County was unique in its focus upon physical activity, only.

To better understand the intensity of ECE efforts in each county, ratios for meetings per number of unique ECEs and trainings per number of unique ECEs were calculated. These are shown in Figure EC-2.

Figure EC-2. FFY17 Ratio of Meetings to Number of ECE Sites and Trainings to Number of ECE Sites, by County



In all counties but Coconino, there were relatively more meetings than trainings, which makes intuitive sense since meetings are often used to discuss training needs and plan future trainings. Across all counties, LIAs held 2.1 meetings and 1.3 trainings for every ECE site, which suggests that PSE efforts generally reached ECEs with repeated contact. However, the strength of efforts varied widely by county and individual sites. While Yuma only reached one ECE site, the intensity of efforts was high relative to other counties, with 10 meetings and trainings provided to the single site during FFY17. Efforts in Maricopa were also relatively strong (8.8 meetings and trainings per site), while Gila had the lowest intensity of efforts (1 meeting at 1 site).

While these numbers offer a preliminary look at PSE efforts, it is important to also consider context: What information was exchanged during meetings and trainings? What progress developed out of meetings and trainings? What barriers prevented more engagement? Information shared in LIAs' narratives helps to answer these questions.

Qualitative Results

Empower-focused Meetings and Trainings. Figure EC-3 shows the frequency of meeting and training topics reported in LIA narratives. The topics covered roughly mirror LIAs' adoption of the three AZ Health Zone early childhood strategies: Empower standards are the most often referenced meeting and training topic (41%) and also the most popular early childhood strategy across counties (see Table EC-2). In two cases, LIAs praised the AZ Health Zone for aligning its strategies with Empower and providing Empower trainings during FFY17.

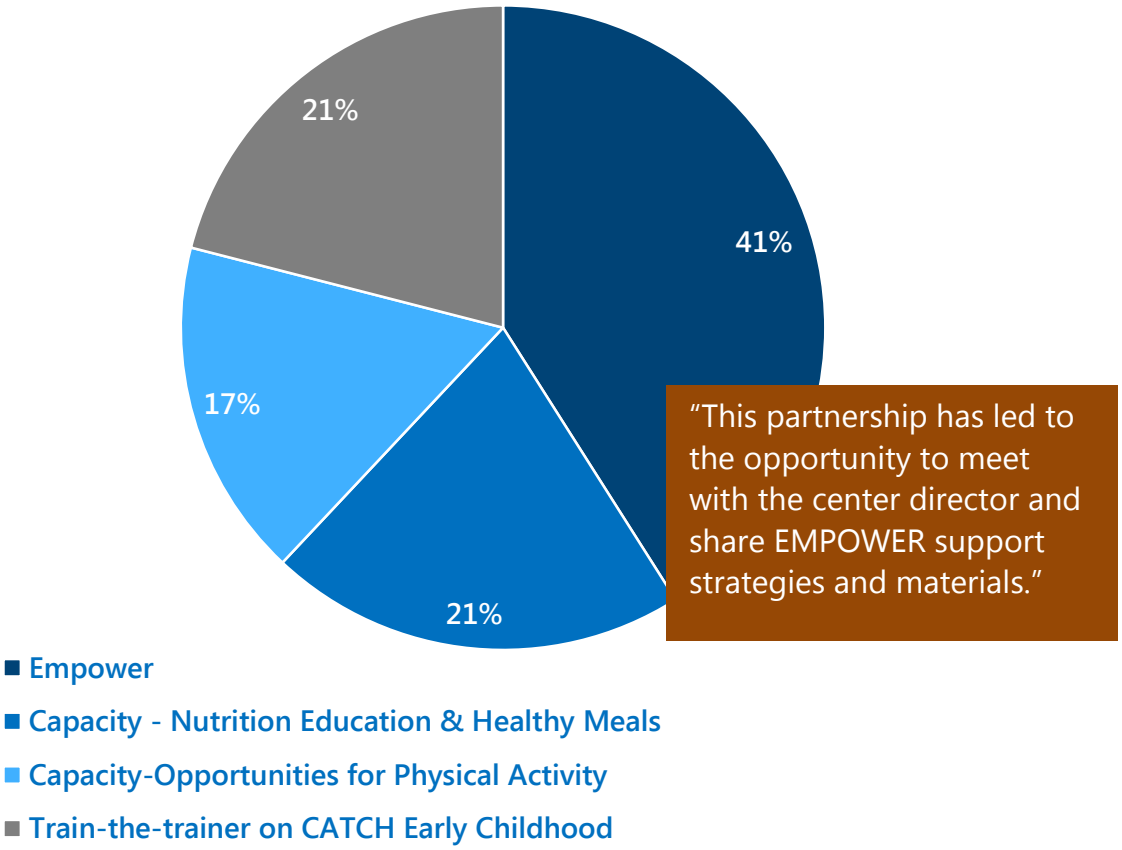
> "A few center directors admitted they have no written policy on physical activity…During the visits, the **Empower Physical Activity Sample Policies** were reviewed."

Only two LIAs described a focus on ECE policy, both of which related to Empower. Given that ECE policy was the weakest of all ECE PSEs measured in FFY16, the lack of reporting policy-specific trainings deserves further consideration. One LIA explicitly requested that the AZ Health Zone provide "[t]rainings for LIAs on how to train ECE providers to write appropriate policy." While LIAs did reference the FFY16 Go Nutrition and Physical Activity Self-Assessment for Child Care (Go NAP SACC) findings in FFY17 narratives, with most expressing future intentions to use results for ECE improvement

plans, it is not clear if those plans include ECE policy. In the two cases where LIAs had already used Go NAP SACC findings to develop plans, one LIA did address policy (see Yuma highlight).

Interestingly, LIAs who led train-the-trainer sessions using *Coordinated Approach to Child Health* (CATCH) *Early Childhood* worked across all three AZ Health Zone strategies (Figure EC-3). No other resources were mentioned for these trainings. This suggests that LIAs find *CATCH Early Childhood* to be a versatile and effective tool that they are comfortable promoting to ECE staff.

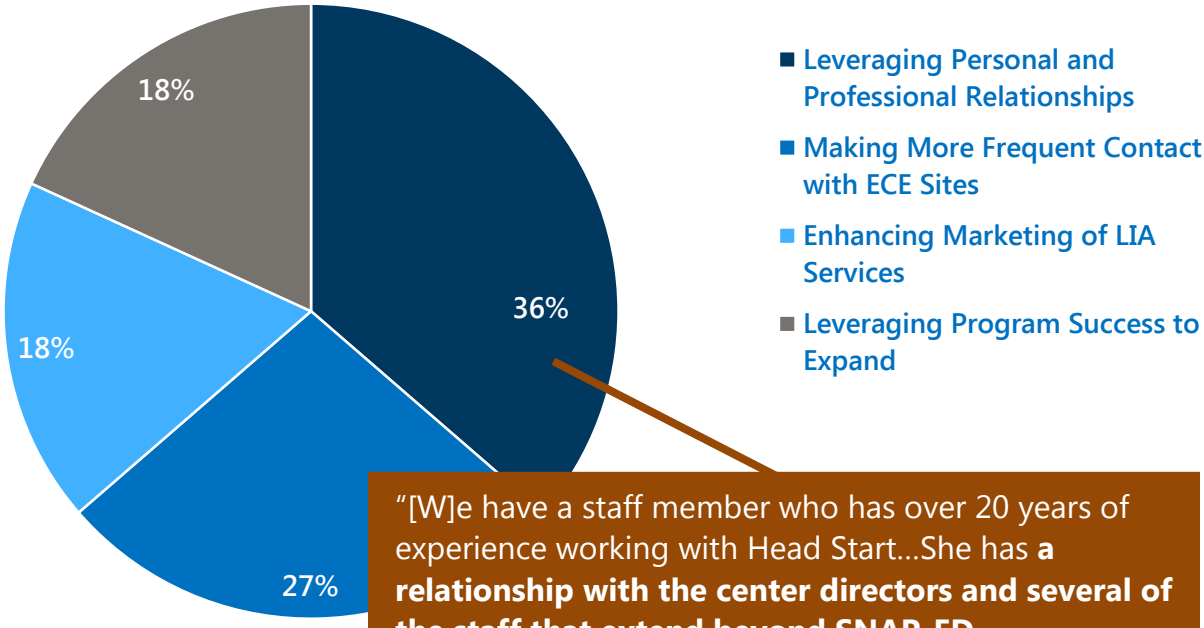
Figure EC-3. References to Early Childhood Education Center (ECE) Meeting and Training Topics by Local Implementing Agencies, N=29



Relationships and Contact Strengthen PSEs. Nearly all LIAs described intensified efforts with existing ECE partners and/or expanding to reach new partners (Figure EC-4). The most popular methods used to strengthen programs were leveraging personal and professional relationships (36% of references) and making more frequent contact with ECEs (27% of references). It is encouraging that LIAs recognized the importance of repeated contact with ECE sites to encourage sustainable PSE change, which should enhance the ratios of meetings/trainings per unique ECE site over time.

"The [ECE] action plan items are broken down into very small achievable steps that require shorter timeframes during site visits. The [LIA] team has experienced good success with this change in strategy, enabling them to **visit centers more often, providing more technical assistance and training events than previous years**."

Figure EC-4. References to Methods Used by Local Implementing Agencies to Strengthen Early Childhood Programs, N=22



"[W]e have a staff member who has over 20 years of experience working with Head Start…She has **a relationship with the center directors and several of the staff that extend beyond SNAP-ED programming and support**."

Multi-level, Multi-focused Programs. Most of the PSE activities described in narratives include elements of multi-level programming: LIAs provided DE in conjunction with PSEs promoting Empower standards and ECE capacity in nutrition and physical activity. In some cases, they actively engaged families—especially parents—in the learning process. However, the most common theme related to multi-level interventions in ECEs was the LIAs' assimilation of their work in other focus areas with their work in early childhood. This integrative approach to programming often connected new partners or helped to bolster sustainability. Examples of how LIA connected their Early Childhood PSEs to Food Systems, Active Living and School Health PSEs are provided below.

Food Systems (Farm-to-School, Gardens) and Early Childhood

"[W]e have asked a member of the Head Start administration to be a part of the Farm to School Committee so that we can work to incorporate [the] Head Start into the program so that it is inclusive of all ages and is relevant to our Native American population."

"We provided a Gardening 101 training in September that focused heavily on food safety and incorporating produce from the garden into healthy meal preparation efforts. During this training, 11 sites were represented that received information on how to safely grow and harvest edible produce for children to eat as part of their healthy meals and snacks on site."

Food Systems (Farmers' Markets) and Early Childhood

"SNAP-Ed staff assisted [the ECE] with conducting a "Farmers Market" event. Parents donated fruits and vegetables, and the children walked around and 'shopped' as if they were at a farmer's market. This has become an annual event…It introduces the concept of Farmer's Markets and casts them in a positive light to children and their parents. [LIA staff] will coordinate the promotion of nearby farmer's markets with their participants through [a] mobile app and printed materials at next year's event."

Active Living and Early Childhood

"The Story on the Trail effort…combine[s] our active living and early childhood efforts…Our goal is to better connect young families with the area trails as a free resource that can be enjoyed by all ages. To achieve this, our event outreach included First Things First, Head Start, and WIC. We also select stories for the Story on the Trail events that are intended for the younger early childhood audience."

School Health and Early Childhood

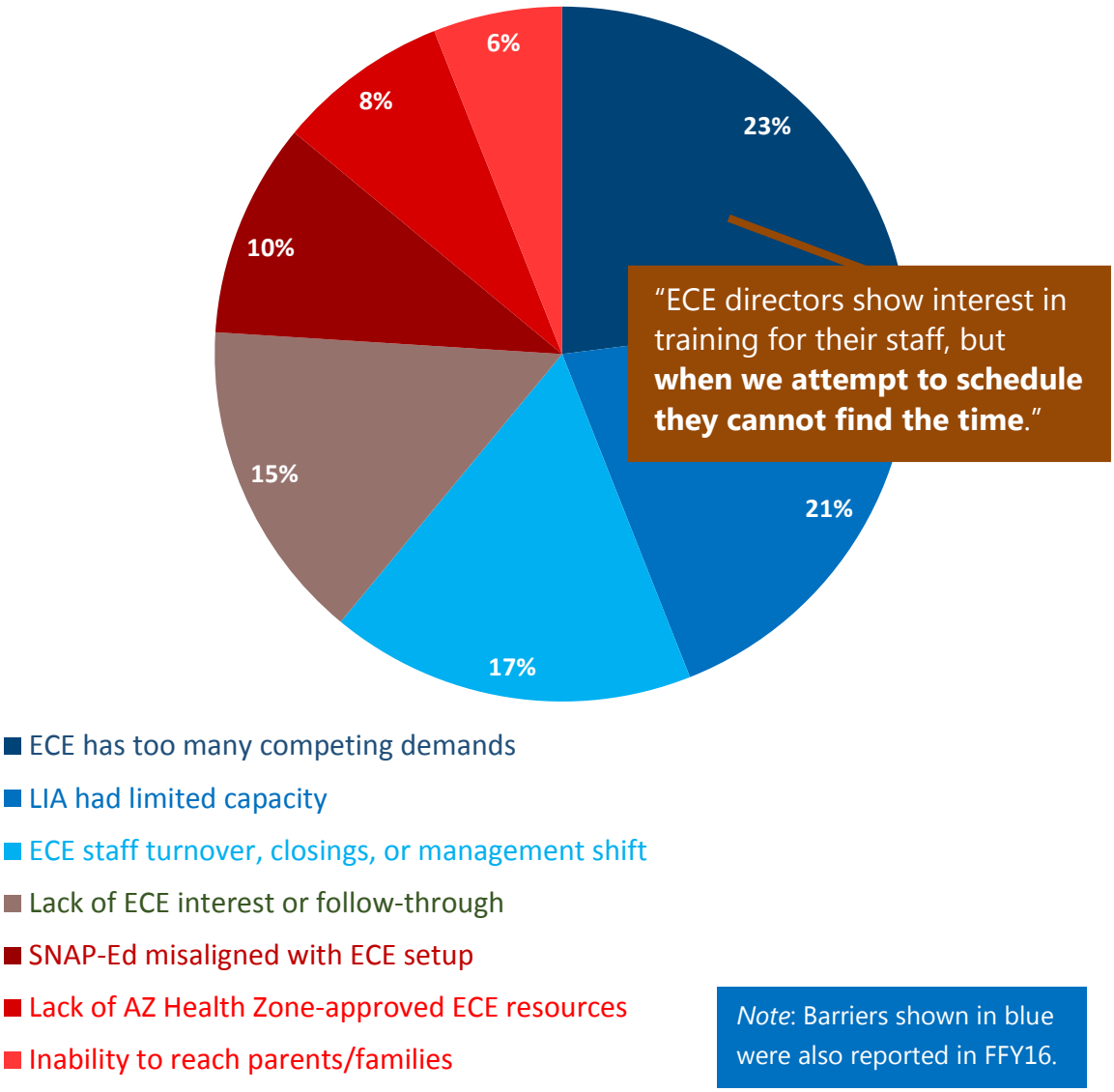
"[LIA] Staff attended the Empower Advanced training this period and was able to provide an Empower Basics Training to 50 High School students who are part of an Early Childhood track…These high school students work directly with preschool students…while receiving child development education."

Unbroken Barriers. In FFY17, LIAs referenced the same number of barriers (48) as they did in FFY16. This unlikely coincidence enabled the AZ Health Zone State Evaluation Team (SET) to compare the type of barriers reported in both years and the relative frequency of those barriers across years. In FFY16, barriers fell into four categories. The three top barriers (competing demands on ECEs, ECE staff turnover, and limited capacity of LIAs) were also the three top barriers in FFY17 (Figure EC-5). While LIAs no longer mentioned the inability to systematically track ECEs in FFY17, they did discuss a greater breadth of new challenges to their programming. Lack of ECE interest or follow through included non-response of ECE sites as well as a failure of ECEs to pursue further development after meetings or trainings.

"**[W]e have continued to try and establish partnerships with the [tribal] Head Start Organization but we have been unable to do so.** We have presented the MOU to the Head Start Organization which was going to present it to the tribe for their approval but we have not had any progress to date."

"Although four ECE centers received the Empower Breastfeeding Support Training, **they did not pursue the recognition program**."

Figure EC-5. Reported Barriers to Collaboration of Local Implementing Agencies (LIAs) with Early Childhood Education Centers (ECEs), FFY17 N=48



In some cases, SNAP-Ed programming could not be delivered to ECEs sites. One LIA reported a general lack of ECE centers to work with, while others reported that the set-up of existing sites prohibited the types of PSE changes that SNAP-Ed programs promoted. In other cases, ECEs were open to SNAP-Ed activities, but a lack of AZ Health

"In FFY17 it was discovered that **only one of [the county's] approved providers prepare food for their children**."

"Many of the Home Providers in [the county] are Spanish speaking…**all of the CATCH Early Childhood materials are in English**."

Zone-approved resources that met their needs inhibited progress. Moreover, as LIAs sought to enhance multi-level programming by reaching ECE families, they encountered many of the same barriers that they have struggled with in adult DE: recruitment for face-to-face education was difficult, so LIAs were exploring alternative methods to reach families.

Early Signs of Progress Align with Meeting and Training Topics. Despite persistent barriers, LIAs described a variety of emergent PSE changes that suggest their efforts in FFY16 and FFY17 are resulting in ECEs' adoption of nutrition (MT5) and physical activity (MT6) supports. These PSE changes aligned with the meeting and training topics reported in Figure EC-3, including the AZ Health Zone's early childhood strategies and train-the-trainer success with the CATCH Early Childhood curriculum:

Empower (MT5 and MT6)

- One LIA collaborated with the Health in Arizona Policy Initiative (HAPI) to present an Empower training that informed the ECE's improvement plan (see Yuma Highlight).
- One LIA received USDA approval for a Breastfeeding Friendly Childcare Training & Recognition Program. They also initiated a pilot project to provide breastfeeding education through WIC along with the SNAP-Ed nutrition education. Due to early success in one city, classes expanded to a second city, and participation numbers increased across both locations.

"Our unit spent the majority of the first half of this year **collaborating with ADHS, Cochise County Breastfeeding Taskforce, and UA Extension Research Team** to create the justification for our plan…we are excited about moving forward with this project!"

Capacity - Nutrition Education & Healthy Meals (MT5)

- One LIA worked with a school district and food service provider to plan a pilot program intended to address food insecurity with 'grab and go dinner' using the Child and Adult Care Food Program (CACFP) program. Progress included the identification of schools most in need of the program. (*Note*: the pilot also aligns with Empower Standard 4.)
- Four LIAs collaborated to reach Head Start food service staff across four counties through a presentation at a Northern Arizona Council of Governments (NACOG) training.

"By working top down in this instance, **we ensured both the reach and embeddedness of our work throughout the culture of Head Start** in Northern Arizona."

Capacity - Opportunities for Physical Activity (MT6)

- An LIA presented the idea of playground stencils to enhance physical activity. In response, the ECE's owner expanded the concrete patio (see Yuma Highlight).
- Another LIA worked with an ECE to place garden watering cans far from the garden, so that when the children water it, they run back and forth repeatedly.

Train-the-Trainer on CATCH Early Childhood (MT5 and MT6)

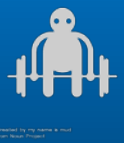
- Five LIAs saw evidence for the implementation of CATCH Early Childhood at ECEs after providing train-the-trainer sessions.

"**Follow up visits with the sites show staff are implementing the activities presented** such as using scarves for throwing and catching (hand eye coordination) and requesting laminated geometric shapes and numbers to use in their daily activities."

Summary of Findings. When the qualitative results are considered with the process indicators reported in the quantitative analysis, these patterns emerge:

STRONGER

WEAKER



Empower Strategy

- The most-adopted Early Childhood strategy
- The most frequent strategy addressed during meetings and trainings
- State-level collaboration strengthened LIA programs
- Promote alongside School Health strategy relevant to ECEs
- Early evidence for success was described in LIA Narratives

CATCH Early Childhood

- Widely used across all Early Childhood strategies
- Provided a way for LIAs to engage ECE staff beyond Empower trainings
- Early evidence for success was described in LIA Narratives
- English-only availability may inhibit use

Capacity - Nutrition Education & Healthy Meals Strategy

- Promoted alongside Food Systems strategies relevant to ECEs
- Early evidence for success was described in LIA Narratives
- Healthy meals not as relevant for ECEs that do not do food preparation
- Limited AZ Health Zone nutrition education resources beyond CATCH

Capacity - Opportunities for Physical Activity Strategy

- Promoted alongside an Active Living strategy relevant to ECEs
- Some early evidence for success was described in LIA Narratives
- Playground stencil activity does not work for ECEs without concrete
- Limited AZ Health Zone resources beyond CATCH and playground stencils

Reaching Parents and Families with Multi-level Interventions

- LIAs are starting to incorporate parents and families
- LIAs are developing creative methods to engage families
- Reported barriers include difficulty recruiting and sustaining contact

ECE Policy

- Despite FFY16 call to improve policy, only two LIAs described such efforts
- One LIA requested further AZ Health Zone training

Multi-level Intervention Highlights

Quality Over Quantity Shows Success in Yuma. Yuma County Public Health Services (YCPHS) only worked with one ECE, but the intensity of its multi-level programming was outstanding. Of all LIAs working in early childhood, the YCPHS had the highest ratio of meetings/trainings to ECE site (10:1). Because they only reached one site, it is clear that all eight meetings and two trainings occurred with that site. This intensity of efforts can provide a model for other LIAs seeking to accelerate their progress in the Early Childhood focus area.

Moreover, the YCPHS was the only LIA to present the ECE with FFY16 Go NAP SACC findings, follow up by supporting action plan formation and implementation, and promote policy changes with the ECE director. In fact, following these conversations, the YCPHS's HAPI partner was able to aid in the ECE's policy development, which aligned with Empower standards. By the close of FFY17, the policy was nearly finalized.

"[I]n collaboration with HAPI, **we arranged an after-hours meeting with the director and staff to present the [Go NAP SACC] assessment results. We provided a brief training on the Empower Standards, including an infographic and interactive discussion**. HAPI conducted an interactive goal-setting activity…[the ECE] shared some well-thought out goals: Family-style meals (the director has even purchased the equipment); build their capacity to lead structured physical activity with the children, especially indoors; provide education and material for the families."

The YCPHS's progress in supporting the ECE's capacity to provide physical activity opportunities was also impressive. LIA staff discussed playground stencils with the ECE's owner, who expanded the concrete patio in preparation for implementation. This inspired excitement among the ECE site staff, who have already begun to recruit volunteers.

In terms of multi-level programming strengths, the YCPHS addressed barriers to reaching families by collaborating with the ECE to plan an ECE family newsletter that will highlight accomplishments, events, and other family activities.

A Tribal Partnership in Navajo. The University of Arizona Navajo Extension (Navajo Extension) made notable progress in supporting multi-level interventions among the White Mountain Apache (WMA). With a keen understanding that a strong, trust-engendering rapport is vital to working with the tribe, Navajo Extension staff partnered with the White Mountain Indian Health Services (IHS) District to re-establish their relationship with the WMA Head Start. As a result, Extension staff met with the ECE director to share EMPOWER support strategies and curricula for staff, students, and parents.

Strong multi-level programming ensued. Navajo Extension staff led a local CATCH Early Childhood train-the-trainer session at the main campus, and ECE staff from all three WMA campuses attended. The complete CATCH curriculum was provided to all centers.

"**The Head Start administrator and parent coordinator have…requested that we present to the Head Start parents at the next PTO meeting** this fall. We are gathering local data from IHS to present to the parents along with a food demo presentation centered on healthy snacks."

White Mountain Apache ECE staff enjoy a CATCH early childhood training.

Meanwhile, LIA staff also delivered DE classes to children at the ECE in support of Empower Standard 1, and both the staff and the students were receptive to the lessons. Navajo Extension was also able to provide support for the Head Start's two-day summer health screening that promoted healthy weight and family-style meals, further engaging families.

KEY FINDINGS AND RECOMMENDATIONS

- Higher ratios of meetings and trainings per unique ECE suggest a greater intensity of reach. In FFY17, these ratios varied by county from low (1 meeting per site during FFY17) to high (10 meetings/trainings per site). LIAs recognized the importance of increasing the intensity of their reach, and many have developed plans to ensure consistent contact with ECE partners.
- State and local work with Empower was broadly successful. LIAs should benefit from the continued collaboration of the AZ Health Zone and the ADHS Empower program.
- LIAs are strengthening Early Childhood PSEs by leveraging established relationships, expanding successful programs, making more frequent contact, and combining work in other focus areas with ECE efforts.
- CATCH Early Childhood has helped to develop train-the-trainer programs, largely due to the AZ Health Zone trainings for LIAs and the popularity of the curriculum. However, LIAs would benefit from having access to new AZ Health-Zone-approved resources in early childhood as programs expand.
- As in FFY16, LIAs need training and resources covering how to support the development of written ECE policies for nutrition and physical activity.*

  *Recurring recommendation from FFY16

References

1. National Center for Education Statistics. Digest of Education Statistics. Available at: http://nces.ed.gov/programs/digest/current_tables.asp.
2. Segal, LM, Rayburn, J, and A Martin. The state of obesity: Better policies for a healthier America, 2016. Trust for America's Health and Robert Wood Johnson Foundation; 2017. Available at: https://stateofobesity.org/states/az
3. www.healthykidshealthyfuture.org

Direct Education - Youth

According to data from the 2015 National Youth Risk Behavior Surveillance System, **students with higher grades are more likely than students with lower grades to be physically active** and play on a sports team, and less likely to watch TV or play video games for three or more hours a day.

Students with higher grades are also more likely to have healthy dietary behaviors, including eating breakfast, eating fruits and vegetables, and avoiding soda.

Meanwhile, **obesity is associated with poorer educational outcomes**, including more school absences, parents more frequently contacted by the school about problems, and lower educational engagement.[1]

Background

In Arizona, 26.9% of youth aged 10 to 17 are overweight or obese. Only 26.0% of high schoolers participate in 60 minutes per day of physical activity, and this proportion is even lower (22.9%) for 6 to 11 year-olds.[1]

Numerous studies within the U.S. link children's nutrition and physical activity behaviors to their success as students[2-5] (see box at left). In Arizona, the AZ Health Zone supports school-aged youth by promoting policy, systems, and environment (PSE) changes and providing direct nutrition and physical activity education (DE) for students. In FFY16, a statewide evaluation revealed that youth-focused DE was broadly and successfully delivered by AZ Health Zone Local Implementing Agencies (LIAs) in conjunction with PSE-level programming.

Lessons learned from the FFY16 evaluation included the need to: (1) expand the quantitative assessment beyond one curriculum and two grades, (2) approve more curricula for use by LIAs to enable greater flexibility in delivery across diverse contexts, and (3) measure more short-term behavioral indicators to better gauge individual-level changes expected to occur over relatively short time periods (e.g., months).[6] Each of these needs were addressed during FFY17: the AZ Health Zone State Evaluation Team (SET) expanded the quantitative evaluation to multiple curricula, as detailed in the Methods and Results that follow; the AZ Health Zone State Implementation Team (SIT) established an

online system for submitting additional curricula to be considered for approval; and the SET revised the Kids' Activity and Nutrition Questionnaire (KAN-Q) to include an *Attitudes* subscale and improve the reliability for physical activity questions (Appendix D).

Methods

This FFY17 evaluation of youth DE serves as an outcomes assessment of curricular series delivered by LIAs to fourth through eighth graders in SNAP-Ed-participating schools, in alignment with the National SNAP-Ed Evaluation Framework (ST1, ST3, MT1, and MT3).

Quantitative Analysis. In FFY17, the validated KAN-Q[7] assessed nutrition and physical activity behaviors as well as knowledge related to national nutrition and physical activity guidelines[8] among fourth through eighth graders. LIAs administered the KAN-Q in pre-post fashion before and after delivery of the approved curricula listed in Table YDE-1.

Table YDE-1. Evaluation Guidelines for Administering the Kids' Activity and Nutrition Questionnaire (KAN-Q) with AZ Health Zone-Approved Curricular Series in FFY17

CURRICULUM NAME	GRADE LEVELS[a]	SERIES REQUIRED?[b]	NO. OF LESSONS[c]
Serving Up MyPlate: A Yummy Curriculum	4th-6th	☒	9
Kid Quest	5th-6th	☒	8
Healthy Classrooms Healthy Schools with Fit Bits	4th-5th	☒	10
Nutrition Pathfinders	4th-5th	☒	7
Nutrition Voyage	7th-8th	☐	9
CATCH Kids Club: Basic Concepts Series	4th-8th	☒	7
The Great Garden Detective	4th	☒	11

[a] Grade levels reflect only those grades that were appropriate for use with the KAN-Q; in one case, a mixed 3rd/4th Serving Up MyPlate class, five third graders were also approved to complete the KAN-Q. [b] A checked box indicates that the AZ Health Zone already required Local Implementing Agencies (LIAs) to deliver the full series of lessons; an unchecked box indicates that delivering the full series was optional for LIAs, however *the full series was required with KAN-Q administration*. [c] Number of lessons in the full curricular series.

Prior to administering the KAN-Q, all LIA staff received a one-hour training and a detailed KAN-Q Proctor Guide with a standard delivery protocol and responses to

students' frequently asked questions. Each KAN-Q administrator was also required to pass an online proctor certification quiz to ensure the quality of data collected.

The SET analyzed results across all participants as well as by county and by curriculum. In the primary and by-county analyses, paired t-tests were used for continuous variables, and the McNemar test was applied to binary data. For the by-curriculum analysis, ANOVA and Mood's median test were used for continuous and binary data respectively. No data were imputed for skipped questions. Significance was set a priori at $p<0.05$. Stata version 13.1 (StataCorp LP, College Station, TX) was used for all statistical analyses.

There were several limitations to the quantitative assessment. During FFY17, the KAN-Q was undergoing revisions to improve reliability and precision, however the revised version was not yet available for the FFY17 evaluation. Therefore, questions regarding physical activity behaviors that were identified as problematic[7] may have impacted findings. Moreover, the KAN-Q relies on self-report for behavioral data and is thus subject to recall bias. While the instrument poses behavioral questions about *yesterday* to enhance recall, those items cannot be assumed to reflect *usual* intake of each respondent, and repeated measures were not feasible.

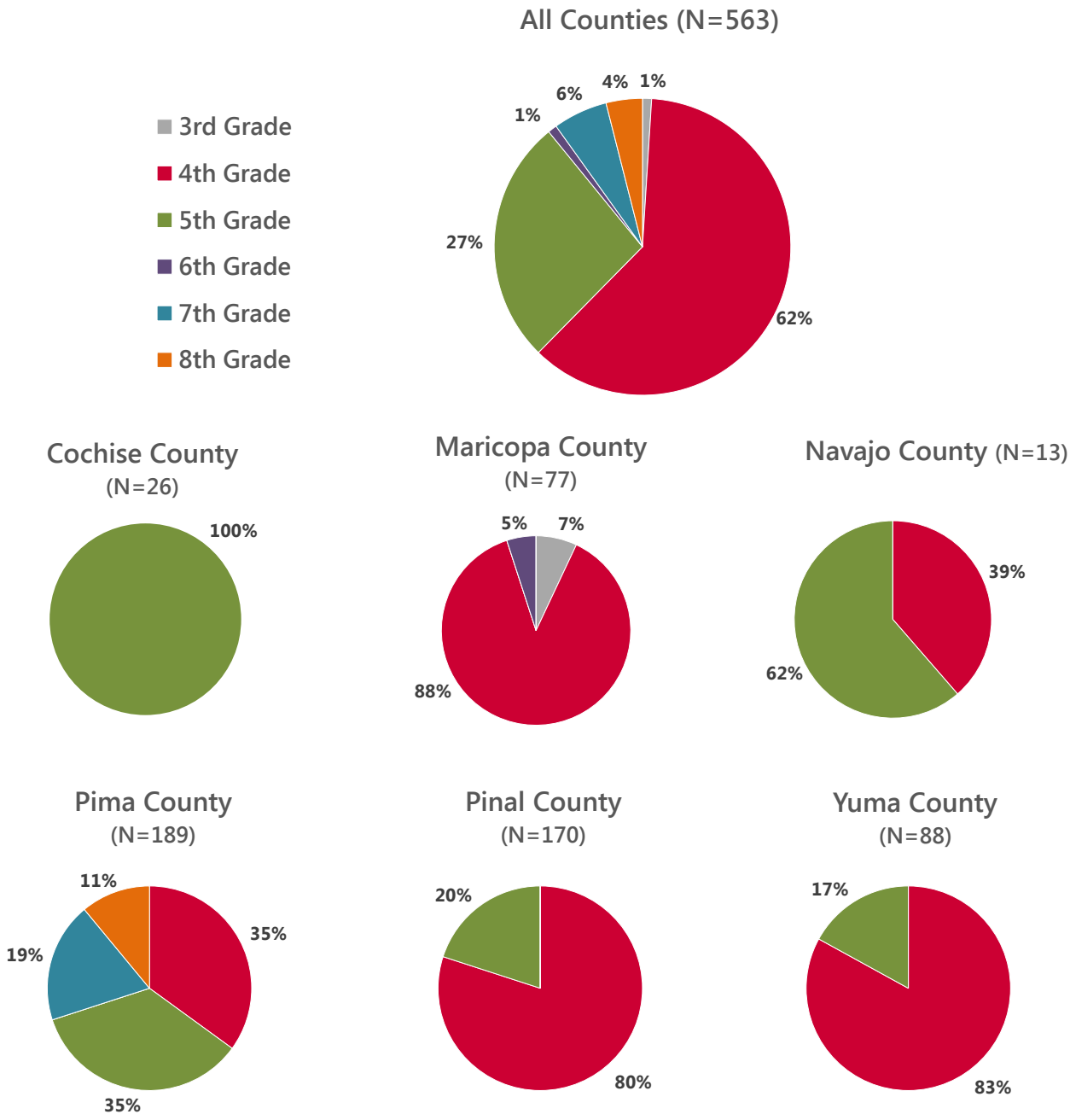
Qualitative Analysis. Semi-annual report narratives (SARNs) were examined to better understand DE programming targeting school-aged youth as well as barriers and facilitators to the evaluation of this programming. SARNs were analyzed for these and other, emergent themes using NVivo v11.0.

Results

Quantitative Results. During the 2016-17 school year, 563 students completed the KAN-Q pre and post assessments. This was nearly double the number of completed pre-posts collected for the previous year (N=244) and is likely due to the expanded number of curricula and, to a lesser degree, grade levels assessed. Six of Arizona's 15 counties participated. LIAs paired three of the seven approved curricula with the KAN-Q assessment: the *CATCH Kids Club Basic Concepts* (*CATCH*), N=297; the *Serving Up MyPlate: A Yummy Curriculum* (*Serving Up MyPlate)*, N=210; and the *Nutrition Voyage: The Quest To Be Our Best (Nutrition Voyage*), N=56.

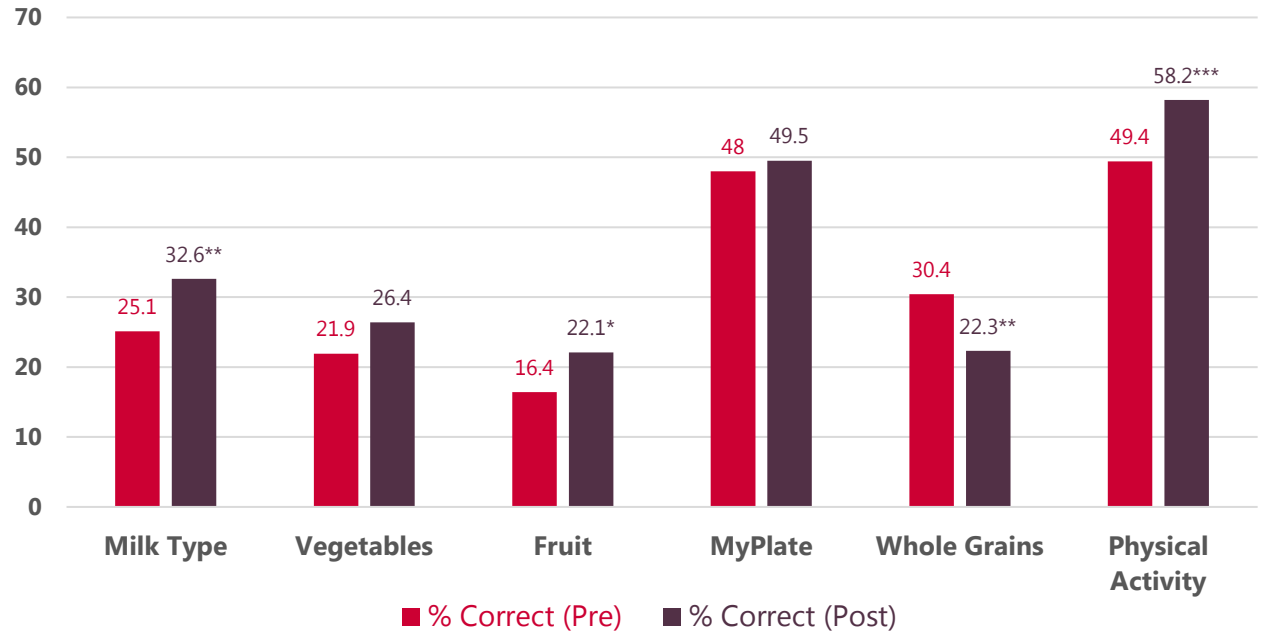
Demographics. Half (50.1%) of all respondents were female, and their average age was 10. Figure YDE-1 provides an overview of participation by grade level across all counties and for each county. Overall, the majority of respondents (88.4%) were in fourth and fifth grade.

Figure YDE-1. Percent of Respondents that Completed the Pre-Post Kids' Activity and Nutrition Questionnaire in School Year 2016-17, by Grade Level and County



Knowledge (ST1 and ST3). Knowledge results for all questionnaires were generally positive (Figure YDE-2). Students appear to have learned the milk type and fruit recommendations in the Dietary Guidelines for Americans (ST1) as well as the national guideline that kids should get at least 60 minutes of physical activity each day (ST3). In Yuma and Pima counties, students also showed statistically significant increases in their vegetable knowledge. However, students in the statewide analysis did not learn that they should make at least half of all the grains they eat whole grains.

Figure YDE-2. Percent of Knowledge Questions[a] Answered Correctly (N=563)



[a] The MyPlate question item read: "How much of most kids' plates at meals should be fruits and vegetables?"
* statistically significant increase at p<.05, ** statistically highly significant change at p<0.01, *** statistically very highly significant increase at p<0.001

With the exception of the whole grains item, these findings were similar to results from the FFY16 assessment. Knowledge gains were detected across all categories in FFY16 and across all but one category in FFY17, and significant increases in fruit knowledge were found in both years. Other statistically significant increases differed by question item: In FFY16, students showed significant gains in whole grain and MyPlate knowledge, while in FFY17 they showed significant gains in milk type and physical activity knowledge. Some of this shift is likely due to the inclusion of more curricula in FFY17 and the popularity of the *CATCH* series, a topic that will be further discussed in the by-curriculum analysis.

Nutrition Behavior (MT1 and MT3). Overall results for nutrition behavior showed little change, and students varied widely in self-reported amounts of foods consumed (Table YDE-2). Still, a few positive trends emerged for grains and beverages. There was a general shift in students' grain consumption from more refined grains at pre to more whole grains at post, with a trend to significance in the refined grain decrease (MT1j). As in FFY16, students reported drinking over four times more water each day than sugar-sweetened beverages (MT1g, MT1h). There was also a statistically significant decrease in the number of students who usually consumed whole milk (MT1g, Figure YDE-3). Given the increase in student's knowledge of milk type, this provides some evidence for the efficacy of targeted nutrition education on milk intake.

Table YDE-2. Students' Self-Reported Daily Consumption of Key Dietary Components Before and After Nutrition Education (N=563)

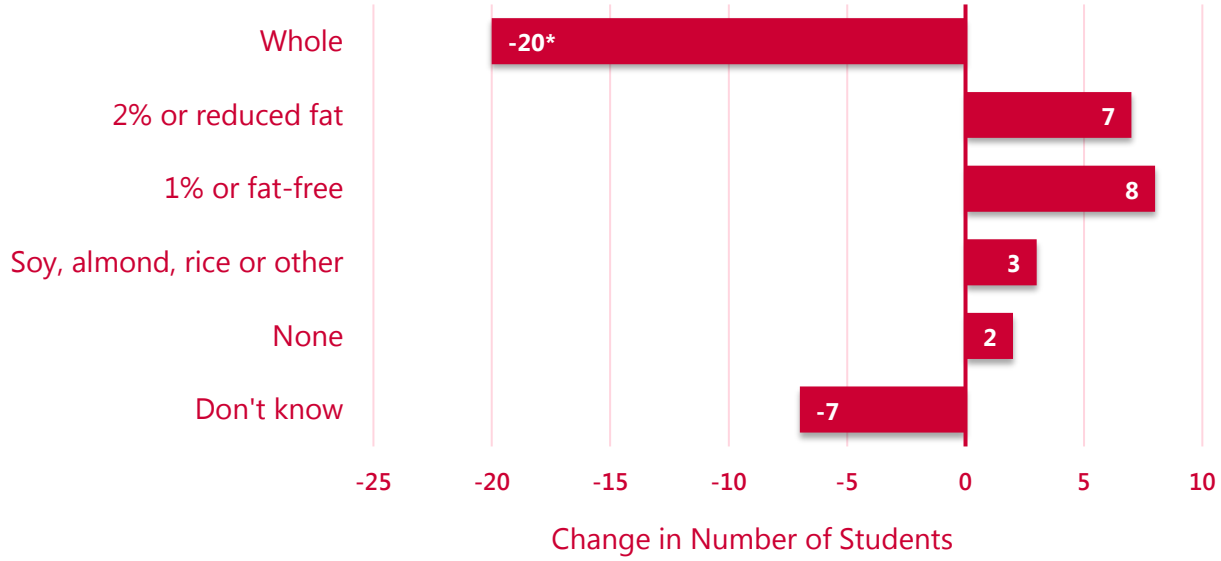
Dietary Component	Mean Intake PRE (Times/Day)	SD	Mean Intake POST (Times/Day)	SD	p-value
Vegetables	1.46	1.44	1.54	1.45	0.2235
Fruits	1.82	1.47	1.89	1.50	0.3389
Whole Grains	1.08	1.16	1.16	1.20	0.2169
Refined Grains	1.20	1.25	1.07	1.09	0.0507†
Milk	1.85	1.42	1.73	1.20	0.0661†
Water	5.15	2.63	5.00	2.49	0.1312
SSBs[a]	1.14	1.24	1.11	1.15	0.6182

[a] sugar-sweetened beverages, † trend to significance at $0.05 < p < 0.10$

By-county and by-curriculum analyses further illuminate milk findings. Two of the six participating counties, Cochise and Pinal, had statistically significant gains in milk knowledge; in Cochise, the number of students who usually drank whole milk fell by 45% ($p < 0.01$) and was replaced by lower-fat milk consumption. In Pinal, daily milk consumption experienced a very highly significant decline (-0.55 times/day, $p < 0.001$). However, it is not clear whether the decline was specific to milk higher in fat. In Yuma county, milk knowledge did not change, but the number of students who usually drank whole milk fell by 14% ($p < 0.05$) and usual milk type was replaced with lower-fat options. In each of these counties, the only curriculum paired with the KAN-Q assessment was the *CATCH* series, which was found to have a significantly greater influence on milk type knowledge than the

other two curricula taught ($p<0.01$). Moreover, of the three curricula, *CATCH* was associated with the greatest switch to 2% milk (18.4% of students, $p<0.01$).

Figure YDE-3. Change in Type of Milk Usually Consumed, Pre to Post (N=556)



* statistically significant increase at $p<.05$

A comparison of how each of the three curricula incorporates milk is provided in Table YDE-3. The *CATCH* series addresses milk in a more focused manner than the other curricula, including a dedicated activity. It also overtly discourages whole milk consumption in favor of lower-fat options (Figure YDE-4).

Table YDE-3. A Comparison of How Milk Consumption is Addressed Across Curricula

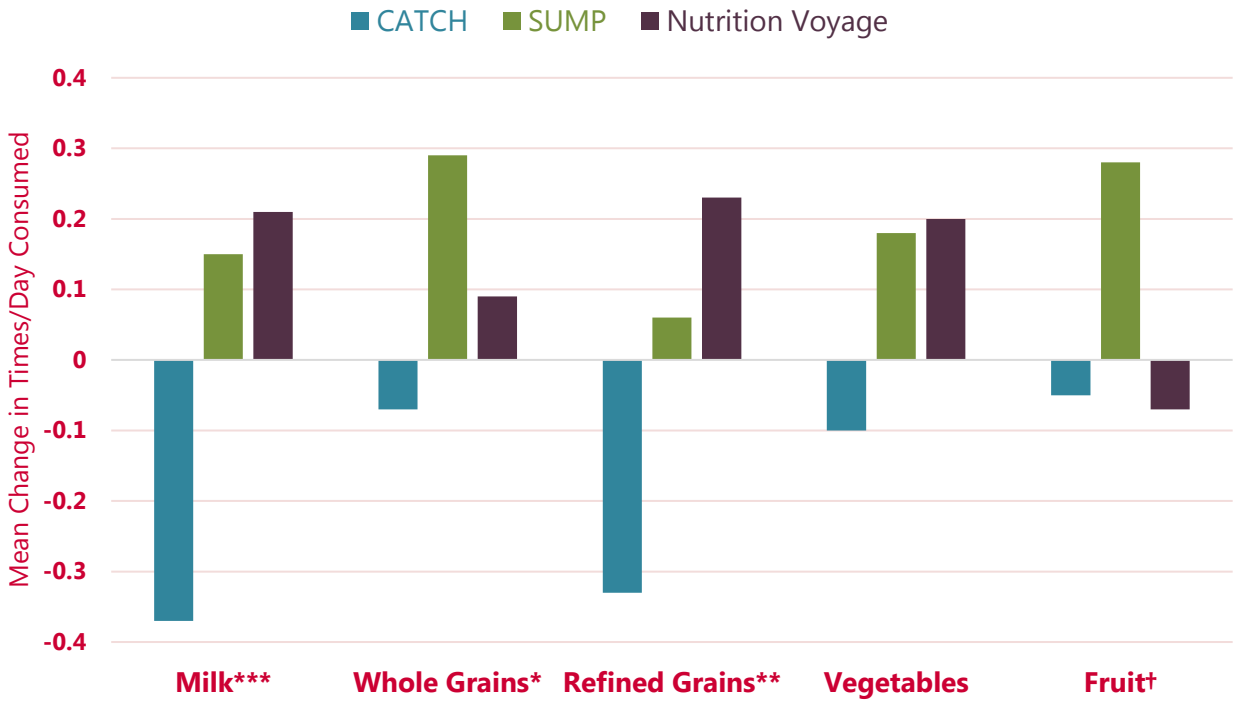
Feature	Serving Up MyPlate: A Yummy Curriculum	CATCH Kids Club: Basic Concepts Series	Nutrition Voyage
Lessons include any milk message	X	X	X
Milk messaging is repeated in lessons	X	X	
Include a milk-focused lesson		X	
Includes a milk-only activity		X	
Encourages low-fat or fat-free milk	X	X	X
Discourages whole milk		X	

Figure YDE-4. *CATCH Kids Club Basic Concepts* Messaging Dedicated to Milk

	GO	SLOW	WHOA
Milk	• Fat-free milk • 1% milk • Fortified soy, almond, and rice milk – unsweetened	• 2% milk • Flavored fat-free or 1% milk • Fortified soy, almond, and rice milk – sweetened	• Whole milk (plain or flavored) • Flavored 2% milk • Milkshakes

No other differences in knowledge changes were found by curriculum, but there were interesting variations for nutrition behaviors beyond milk (Figure YDE-5). A significantly larger increase in mean whole grain consumption was found to be associated with *Serving Up MyPlate* (+0.29 times/day) than with *CATCH* (-0.07 times/day) or *Nutrition Voyage* (+0.09 times/day), while a significantly larger decrease in mean refined grain consumption was found to be associated with *CATCH* (-0.33 times/day) versus *Serving Up MyPlate* (+0.06 times/day) or Nutrition Voyage (+0.23 times/day). Although preliminary, these findings suggest that *Serving Up MyPlate* may be more effective at promoting greater intake of healthy grains, while *CATCH* may be more effective at promoting avoidance of unhealthy

Figure YDE-5. Mean Change in Daily Consumption of Food Groups, Pre to Post, by Curriculum[a]



[a] CATCH: *CATCH Kids Club Basic Concepts* series, SUMP: *Serving Up MyPlate: A Yummy Curriculum;* † trend to significance at $0.05<p<0.10$; * statistically significant increase at $p<.05$, ** statistically highly significant change at $p<0.01$, *** statistically very highly significant increase at $p<0.001$

grains. More generally, *CATCH* appeared to encourage the reduction of unhealthy eating behaviors, whereas *Serving Up MyPlate* and *Nutrition Voyage* may have encouraged an increase in the consumption of certain types of nutritious foods. Interestingly, while all three curricula reference MyPlate, the *CATCH* series relies upon the Go, Slow, Whoa model and includes energy balance as one of three key messages, while *Serving Up MyPlate* centers on using MyPlate to frame messages and guide student activities. *Nutrition Voyage* has students visit http://choosemyplate.gov and other USDA websites, with lessons largely designed around Math, Science, and English Language Arts standards.

Physical Activity Behavior (MT3). While students' knowledge of physical activity guidelines increased, we found little change in their physical activity behaviors. The percent of respondents who met the national recommendation for getting 60 minutes of physical activity yesterday remained stable before and after direct education (38.2% vs 37.1%, respectively). Findings are roughly consistent with those in FFY16, when physical activity behaviors changed little and 42.5% of respondents met the national recommendation of 60 minutes of activity per day.

It is important to note that both the FFY16 and FFY17 evaluations used the unrevised version of the KAN-Q, which was found to have a problematic physical activity subscale that inhibited the SET's ability to interpret findings.[6] Starting in FFY18, the AZ Health Zone's KAN-Q assessments have begun implementing the revised KAN-Q with an improved physical activity subscale (Appendix D) that is intended to enable a more robust interpretation of future results.

Qualitative Results. Nineteen LIAs submitted mid-year and end-year SARNs, including seven health departments and 12 units within the University of Arizona Cooperative Extension. Of these, 17 addressed DE among school-aged youth in their narratives.

Based upon narrative reports, LIAs appear to have expanded their use of and comfort with more AZ Health Zone-approved curricula. Compared with FFY16, there was an increase in the number of curricula discussed by LIAs in the FFY17 SARNs (Figure YDE-6). *Activity and Eating*, *Dig In!*, *Growing Healthy Habits*, and *Nutrition Pathfinders* were newly mentioned, while only one curriculum—*Exercise Your Options*—was no longer referenced. Moreover, the number of LIAs referencing curricula in FFY17 increased from FFY16. As in FFY16, *CATCH Kids Club* received the most narrative coverage. However, *Serving Up MyPlate* was mentioned less, and *Junior Master Gardener* and *Cooking Matters for Chefs and Kids* received greater attention despite their lack of a required evaluation component. Notably,

the number of LIAs that referenced the *Junior Master Gardener* curriculum increased from two to nine.

In terms of feedback regarding specific curricula, LIAs described the strengths and weaknesses listed in Table YDE-4. While some longer series continued to create challenges surrounding scheduling, LIAs described situational use of curricula for different contexts: Longer series were often used to fulfill requests for more frequent or sustained DE, while shorter or more flexible curricula were implemented when scheduling was restricted.

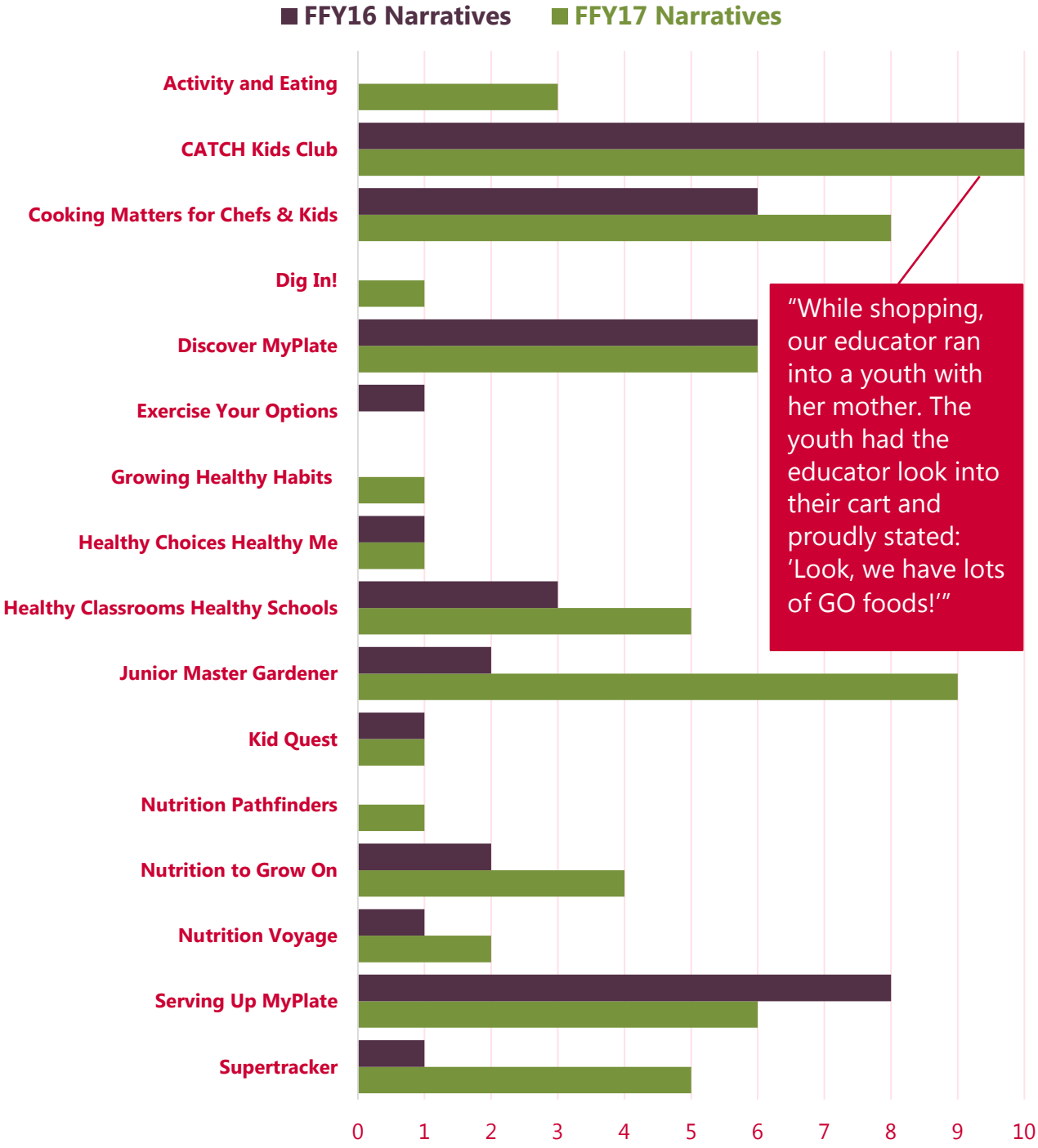
"In a conversation with a Superintendent in one of the school districts, she mentioned her interest in ensuring that all students receive nutrition education and was exploring creating a more structured framework for the schools in which all the schools would receive the same curriculum but appropriate for each grade level. We promoted the standards-based *Serving Up MyPlate* as one that would be effective in meeting this programming [need]."

"For schools with gardens, our Master Gardener provides *Nutrition to Grow On*, often pairing it with *Cooking Matters* to use produce from the garden."

Narratives also included creative methods for recruitment and delivery (Table YDE-4) that suggested a mounting confidence in providing series-based lessons. Most LIAs planned DE based upon existing PSE activities, many launched PSE efforts from the successful delivery of DE series, and some paired complementary curricula. Curriculum modification guidelines enabled some flexibility in addressing context, although one LIA expressed frustration regarding modifications that required consultation with the AZ Health Zone, which delayed scheduling.

Overall, LIAs were using many of the approved curricula with elementary school students. However, they were eager for more curricula to become available for use with middle and high school students.

Figure YDE-6. Number of LIAs[a] that Report on K-12 Curricula in Semi-Annual Report Narratives, FFY16 and FFY17



[a] LIAs: Local Implementing Agencies were defined as individual health departments (N=7) and distinct units within the UA Cooperative Extension (N=12), for a total of 19 LIAs that made narrative reports in FFY16-17.

Table YDE-4. LIA Narrative Feedback for AZ Health Zone-Approved Curricula, FFY17

Curriculum	Strengths (No Weaknesses Mentioned)	LIAs' Creative Use of Curriculum
CATCH Kids Club	Incorporates physical activity into lessons Food demonstrations popular among students Good information retention Easy to integrate into after-school/summer programs Schools' interest increases sustainability Can deliver with train-the-trainer, CSPAP, & SFSP PSEs	Expansion into school-wide adoption Pairing with gardening curricula & cooking club activities Older students receive lessons and mentor younger students in physical activity Using to influence foods offered in schools
Junior Master Gardener	Incorporates math/science standards & experiments Can deliver with garden PSE	Internal evaluation for fruit & vegetable outcomes
Dig In!	Can deliver with garden PSE	

Curriculum	Strengths	Weaknesses	LIAs' Creative Use of Curriculum
Cooking Matters for Chefs and Kids	Behavioral focus (food preparation, tasting) enhances interest Flexible scheduling Effective across ages	Food safety restrictions can make food demonstrations more difficult	Pairing with food demonstrations, taste tests, smoothie bikes, gardening curriculum Older students receive lessons and mentor younger students Catalyst for cooking clubs
Supertracker	Can deliver with all School Health PSEs	Requires computer access	Pairing with in-school physical activities & culinary classes
Serving Up MyPlate	Good information retention	Hard to schedule 9 lessons	
Discover MyPlate	Behavioral focus (songs, tastings) enhances interest Good information retention Can deliver with train-the-trainer PSE	Lessons take longer than allotted time Too easy for some	Engaging families (e.g. parent participation in food demonstrations, bringing emergent reader books home)
Healthy Classrooms Healthy Schools		Hard to schedule 10 lessons	Pairing with food demonstrations and taste tests Lesson posters integrated into cafeteria environment
Nutrition to Grow On	Can deliver with garden and farm-to-school PSE strategy	Pace sometimes too advanced	Pairing with food demonstrations, taste tests, cooking curriculum
Growing Healthy Habits	Can deliver with garden PSE strategy	Subject matter a bit advanced	

Beyond references to specific curricula, SARNs described strengths, opportunities and threats related to general DE programming targeting youth. These themes emerged:

DE Expansion. LIAs often described DE expansion into new sites as well as a shift toward the more systematic integration of DE into classrooms. Expansion was motivated by both LIAs and school leadership: LIAs described leaders' heightened interest in intensifying efforts after successful DE delivery at their school, and LIAs used success stories in other locations to spur expansion into new sites or with new partners. Notable areas of DE growth included implementing lesssons at new gardening sites; a growing presence in middle and high schools, in particular related to cooking and the *Supertracker* curricula; and the pursuit of tribal and Indian Health Services partnerships in Navajo and Maricopa counties. Some LIAs also described an impressive ability to meet the increased demand for DE by incorporating peer mentorship or developing a train-the-trainer model.

> "[W]e problem solved with the administration and decided to partner with the middle school 'mentor students' to help teach the CATCH physical activity lessons. Each week, our educator meets with the mentor students and presents the physical activity lessons for the elementary students...we divide the 6o elementary students into three groups, **and the mentor students teach the physical activity demonstrations**."

As work with middle and high schools increased, many LIAs called for more AZ Health Zone-approved curricula targeting these older age groups.

Behaviorally-focused DE Reinforced Learning and Generated New DE Opportunities. As in FFY16, FFY17 narratives revealed that LIAs, teachers and students valued the skill-building components of curricula (e.g. label reading, cooking) as well as food demonstrations and taste tests, which often led to requests for more of the same.

> "We have found **that this combination of an interactive lesson combined with a physical or arts and crafts activity keeps the children's attention** and helps the children remember the lesson. When [LIA staff] arrived at a site for the nutrition lesson, the children cried out, 'Yay! Nutrition is here!'"

Growing Sophistication of Internal Evaluation. In FFY16, five LIAs reported positive outcomes related to DE lessons for school-aged youth. In FFY17, eight LIAs described internal evaluations that also provided evidence for the strength of DE programming. Furthermore, LIAs grew in terms of the quality of their internal assessments. This included: 1) using findings from a partner program's assessment to compare student interest in various activities pre to post for program improvement; 2) the widespread administration of teacher surveys by multiple LIAs for program improvement; 3) adopting and administering a validated tool to assess grades K-2; 4) developing a tool to assess fruit and vegetable outcomes among students, which revealed positive intentions to changes and behavior changes; and 5) the use of a Turning Technologies audience response system to administer pre-post surveys with third through eighth grades.

> "Of all the students polled at the post-test: 100% would recommend this class to another student, 100% were more excited about gardening…**favorite activities were planting/gardening 75%, solar oven 69%, [and] dehydrating/cooking/ making snacks/cutting 56%**."

Programming Threatened by Common Barriers. As in FFY16, competing demands on the educational system and lack of top-down support for regular nutrition education in the classroom were reported to limit classroom time, especially for series-based curricula. For rural LIAs, school staff turnover inhibited relationship-building and scheduling. In FFY17, LIAs also referenced a new commonly-experienced challenge: increased demand for DE was difficult to meet with limited LIA staff. However, unlike the previous year, many LIAs described attempts to overcome these familiar barriers through creative scheduling and partnerships.

> "After years of a great working relationship**, the pressure for teachers to meet [academic] performance levels has limited our opportunity…to teach or organize events**. We are working with other organizations within the area to partner on projects to limit [duplication of efforts] in the school."

Robust Plans to Provide Multi-level, School-based Interventions. LIA narratives described the development and implementation of multi-level interventions that incorporated DE, site-level PSEs, and in some cases, community-level PSEs. While connections between DE and gardening were also made in FFY16, more curricula were paired with gardening in FFY17, and other PSEs were referenced, including: farm-to-school, the SFSP, LWP implementation, menu planning, train-the-trainer, and CSPAP. Moreover, some narratives reflected a deeper understanding of how to leverage state, district, and community partner support for PSE and DE programming.

> "[T]he school has an herb garden, and the teacher involved with the garden has asked us to present lessons to the culinary arts students **to help bridge the connection between gardening efforts and their use in nutrition and cooking**. The students can then use that knowledge and what they produce in the garden to sell seedlings at the [City] Farmers' Market."

> "With the impetus of the ADE making school health a priority by requiring districts to track LWP implementation, **schools will likely be more receptive and engaged in conversation about bringing more resources and supports**...there is an opportunity to match those efforts with nutrition and physical activity education."

Enthusiasm for Evaluating Multi-level Interventions. As in FFY16, some LIAs reported frustration related to the use of the KAN-Q in FFY17 with specific curricula only. However, fewer complaints were reported and some successful KAN-Q data collection efforts were described. Encouragingly, most KAN-Q comments were focused upon enthusiasm for the revised version of the survey and the new administration model, which was introduced in July 2017. This new model requires pre-tests at the start of the school year, prior to any interventions being delivered, and post-test at the end of the school year, after interventions have been delivered. It is designed to assess the influence of both PSEs and DE on students' knowledge, attitudes and behaviors, and thus evaluates multi-level interventions (see the Deep Dive section for more information).

Summary of Findings. Overall, the FFY17 KAN-Q results for the *CATCH* series, *Serving Up MyPlate*, and *Nutrition Voyage* suggest that student outcomes improved for knowledge

but had a limited influence on behaviors. Narratives revealed that LIAs have gained extensive experience with more AZ Health-Zone-approved curricula, developed a deeper understanding of school-based multi-level interventions, and learned how to leverage success to expand reach.

Nutrition and Physical Activity Knowledge

- Students appeared to have learned some key messages for MyPlate food groups
- Students appeared to have learned national recommendations for physical activity
- Other short-term indicators like attitudes were not measured; this inhibits interpretation

Nutrition and Physical Activity Behaviors

- Positive changes were found for healthier milk consumption
- Some trends suggested positive changes in healthy grain consumption
- No notable changes were found for other nutrition or physical activity behaviors
- Findings for physical activity are difficult to interpret given poor reliability of these scale items

Differences by Curriculum (*CATCH*, *Serving Up MyPlate*, *Nutrition Voyage*)

- *CATCH* appeared to have had the strongest influence on healthy milk consumption
- *CATCH* may have encouraged the greatest reduction in refined grains
- *Serving Up MyPlate* appeared to have had the strongest influence on whole grain intake
- Overall, *CATCH* seemed to reduce the consumption of unhealthy foods
- Overall, *Serving Up MyPlate* seemed to encourage the consumption of healthy foods

Youth DE Evaluation

- LIAs nearly doubled the number of KAN-Qs competed in FFY17 versus FFY16
- LIAs independently conducted several successful internal evaluations to improve programs
- LIAs were enthusiastic about using the KAN-Q with multi-level interventions

AZ Health Zone-Approved Curricula

- *CATCH*, *Junior Master Gardener*, and *Cooking Matters* were popular among LIAs and were used in conjunction with appropriate PSE strategies
- LIAs largely relied on *Supertracker* as they expanded into high schools; more age-appropriate curricula for older students may provide further support for this expansion
- LIAs are learning to match curricula to schools' specific needs, navigate scheduling barriers for series, and employ creative delivery methods to enhance learning

Multi-level Intervention Highlights

Consistently Strong in Pinal. In FFY16, the UA Cooperative Extension, Pinal (Pinal Extension) was highlighted for its participation in the KAN-Q evaluation and the increases measured across multiple knowledge categories after extension staff delivered the *Serving Up MyPlate* curriculum to fourth graders. This year, Pinal Extension submitted 170 matched pre-post assessments from fourth and fifth graders, which was nearly a third of all KAN-Q assessments completed across the state. The *CATCH Basic Concepts* series delivered by Pinal Extension staff was associated with a significant increase in student learning related to milk type, fruits, and physical activity.

This is not surprising given the intensity of staff efforts to promote the seven-lesson series across four grade levels and three cities. The LIA integrated visuals, food demonstrations, and taste tests, and seasoned instructors focused on the *CATCH* core concepts of GO, SLOW, and WHOA foods and doing physical activity. They reinforced learning at the start of each new class and even promoted student leadership during lessons and physical activities.

"Students participating in the lessons were very excited to try the healthy recipes, and many came back the following class saying that **they liked the snack so much that they made it with their family**."

Students enjoy a CATCH lesson with veggie wrap samples.

"The educator has **built a rapport with the kids**…They love to volunteer to be my Nutrition Aides."

"[I]f there is a new student present…the other **students have the knowledge and confidence to teach and lead the activities**."

Multi-level Moves in Greenlee. The UA Cooperative Extension, Greenlee (Greenlee Extension) is making great strides toward implementing and evaluating multi-level interventions in rural Greenlee County. In FFY17, LIA staff paired *Junior Master Gardener* and *Nutrition to Grow On* lessons with seed planting and other gardening activities, just in time for the Duncan Elementary School Garden Grand Opening on September 25, 2017. To better understand the impact of these activities on students' intentions and behaviors, the LIA developed their own five-question assessment tool to measure fruit and vegetable outcomes specific to gardening experiences. After administering the pre-post survey to their Junior Master Gardener students in third through fifth grades, Greenlee Extension found that students were more likely to ask their families to buy fresh fruits and vegetables at post, and they consumed more fruits and vegetables at post. Only one item ("Will you ask your parents to have fruits and vegetables where you can reach them?") showed no change, and this item already scored high on the pre-test.

"Plant People" engaged students in growing during Junior Master Gardener lessons.

Extension staff also worked to expand their promotion of cooking skills from kids to their families. They successfully engaged parent volunteers in *Discover MyPlate* lessons for kindergarteners using the "Look & Cook" food demonstrations, and they developed a KIDZ Cooking Club summer program that incorporated nutrition DE, cooking skills, and CATCH physical activities. In FFY17, this program enjoyed its second year at the two main county public libraries, receiving praise from both students and parents.

KIDZ Cooking Club participants: healthy meals and CATCH activity.

As of summer 2017, Greenlee Extension expanded this program by engaging families with adult DE using the *MyPlate for My Family* curriculum, and they have future plans to further integrate youth and adult education using *Cooking Matters for Chefs and Kids*.

"I'm going to tell my Girl Scout Leader that **I can handle the snacks at our next meeting**. I've got this!"
~ Eight-year-old member of the KIDZ Cooking Club

"**This is *really* delicious**. I'm pleasantly surprised!"
~KIDZ Cooking Club 6th grader after tasting a tuna boat

Deep Dive: Assessment of Multi-level Interventions Piloted in Schools (AMPS), School Year 2016-17

Background. Since October 2015, the Arizona SNAP-Ed Evaluation Framework has assessed school health programming using discrete measures for DE and policy, systems environment PSE interventions. For DE, the KAN-Q has been administered with curricular series in pre-post fashion, while PSE interventions have been measured separately using other validated tools.[6] We know, however, that the USDA seeks to achieve greater impact by promoting multi-level interventions in schools.[9] Thus, while Arizona's SNAP-Ed Local Implementing Agencies (LIAs) are required to purposefully combine DE with PSEs in all school-based programming, the cumulative effects of these activities have not been captured by the state's Evaluation Framework. Moreover, the interpretation of KAN-Q findings would better reflect intervention activities if PSE changes reaching students were incorporated.

The SET developed the AMPS project to "amp up" the use of KAN-Q from DE, only, to use with PSE *and* DE (i.e., multi-level) interventions. Our project goals were to:

- Develop a practical data collection method for reporting school-based PSEs.
- Develop a method for incorporating reported PSE activity into KAN-Q data analysis.
- Explore the potential cumulative effects of school-based multi-level interventions on students' health-related knowledge and behaviors.

Methods. The SET worked with the Maricopa County Department of Public Health subcontractor, the City of Phoenix Tempe Kids Zone (TKZ), to develop and implement the AMPS project. To ensure feasibility, outcomes were assessed using a pre-post quantitative study design (Figure YDE-8).

Figure YDE-8. The AMPS Study Design

The Arizona school year begins approximately two months prior to the start of the SNAP-Ed fiscal year, so AMPS followed a school rather than fiscal year timeline. The pre-test was administered in August/September 2016 before interventions began, and the post-test was administered as close to the end of the school year as possible, in April/May 2017.

Participants. TKZ provides SNAP-Ed programming in the form of both DE and PSEs to youth attending afterschool sessions in Maricopa County, Arizona, at participating SNAP-Ed schools. All TKZ sites receiving afterschool SNAP-Ed interventions in grades 4-8 were recruited for AMPS. Of the 246 AMPS-eligible students expected to enroll in TKZ programs during SY16-17, 207 students were enrolled into AMPS via the completion of the KAN-Q pre-test, and we received 119 matched pre- and post-tests (Table YDE-8). This just met the project's pre-determined minimum sample size of 120 matched pre-posts, despite loss to follow-up from differential enrollment in programs throughout the year, absences, and other causes.

Table YDE-8. Expected and Actual AMPS Participation, by Grade

Grade	4th	5th	6th	7th	8th	TOTAL
Expected TKZ Afterschool Enrollment	116	95	18	10	7	**246**
Completed AMPS (matched pre-posts)	52	48	11	4	4	**119**

Data Collection. The KAN-Q has been validated for use with children in grades four through eight.[6] Items measure nutrition and activity behaviors as well as students' knowledge of national nutrition and physical activity recommendations. A detailed proctor protocol was developed for the KAN-Q specific to AMPS.

The first administration of the KAN-Q pre-test was carried out by a SET member to model the proctor protocol for TKZ staff. The evaluator then observed two pre-test administrations by trained TKZ staff and provided feedback. All subsequent proctoring was conducted by trained TKZ staff.

AMPS sought to capture all DE interventions (lesson series, single lessons, food demonstrations, etc.) provided by the TKZ throughout the school year. This information was collected from the DE tab of the Education and Administrative Reporting System for all months spanning the school year. In SY16-17, three state-approved, behaviorally-focused curricula were taught to AMPS participants:

- *CATCH Kids Club* lessons promote both nutrition and physical activity; the *CATCH Kids Club* Activity Box promotes physical activity and the development of motor skills.
- *Cooking Matters for Chefs and Kids* promotes healthy eating and the development of food preparation skills. It does not address physical activity.
- *Junior Master Gardener* promotes an understanding of food sources, the science of gardening, and the development of gardening skills. Just one of eight chapters is focused on nutrition related to gardening. The curriculum does not explicitly promote physical activity, although gardening done in conjunction with the curricula may include physical activity.

To capture site-based PSE delivery, the SET worked with the TKZ to develop a School Year Semi-Annual Report Table (SART) Supplement. This enabled the TKZ to record site-specific PSE work from August 2016 through May 2017 at AMPS pilot sites. Beyond the regular SART, the Supplement collected additional data for school-based programming (strategies 2, 3, 10, 11 and/or 12), including: (1) the date(s) and duration of PSE intervention, (2) the delivery site, (3) a detailed description of intervention, and (4) the target audience.

Data Analysis. Pre-post analyses involving binary data (primarily knowledge questions) were evaluated using the McNemar test, while pre-post continuous data (primarily behavior questions) were analyzed using the difference between post and pre and the paired t-test. Additionally, regression models combining DE and PSE variables were developed. Multiple regression was used for continuous dependent variables (primarily behavior questions), while logistic and ordinal logistic regressions were used for categorical and ordinal dependent variables (primarily knowledge questions). Stata/IC, Release 13.1 was used for all analyses.

AMPS PROJECT GOALS

1. **Develop PSE data collection method for use with KAN-Q**
2. **Develop data analysis method for PSE data**
3. **Explore KAN-Q outcomes in relation to school-based multi-level interventions**

Findings and Implications. We discuss findings here in relation to our original project goals (AMPS Project Goals Box), which centered on developing evaluation methodology (Goals 1, 2) as well as outcomes assessment (Goal 3).

PSE Data Collection. The SNAP-Ed Electronic Data System (SEEDS) began development in FFY17, after the start of AMPS. Beginning in FFY18, SEEDS will collect process indicators across all AZ Health Zone strategies, including school-based PSEs, which negates the need to pursue an additional data collection system as originally intended with AMPS. Nevertheless, because SEEDS was not available during SY16-17, the SART Supplement was critical to AMPS data analysis.

Incorporating PSE Data into Analysis. The SART supplement provided unique opportunities to explore methods for cleaning, organizing, and analyzing PSE data for integration into the broader KAN-Q multi-level intervention analysis. Two key considerations emerged from the pilot:

1. *What school-based PSE activities should be included, and how?* AMPS-reported PSEs occurred at both the district (Local Wellness Policy) and school level. For this analysis, we excluded district-level work because it was unlikely that long-term district policy initiatives would impact students directly in the AMPS afterschool programs during the project's time frame. However, being that district-level work has the potential for a broader impact, future statewide analyses will explore the time it takes for various school health PSE interventions to influence students, so both district- and school-level can be incorporated differentially.

   NEW IDEA ☼

   In FFY18, an exploratory analysis will compare results for all PSE activities and also separate out the influence of school- versus district-level PSEs to test for differential effects.

2. *How can school-based PSEs be quantified in a systematic way that accurately reflects the strength, or dosage, of interventions?* School-based PSEs vary in frequency and intensity, but the strength of the PSE does not often track with number of reported minutes, dates, or number of visits. Other factors such as intervention type (e.g. SNAP-Ed meeting participation vs. leading training), focus (e.g., gardens vs. written policy), target audience (e.g., all teachers vs. one teacher), and intended reach (e.g., all students at a school vs. one classroom) are difficult to capture, and duration is difficult to define.[10] To address this issue, we developed a PSE scoring system that weighted PSEs by perceived strength of the intervention, with 1 being the weakest and 4 being the strongest score (Table YDE-9). To assign scores, we referred to the PSE dose definition

promoted by the USDA,[10] where dose is calculated by multiplying *reach* (% of people from the target population touched by the intervention) and *strength* estimates, which are defined in terms of frequency and intensity:

- **Low strength**: variable frequency/low intensity, unlikely to create behavior change on its own, e.g. media campaign
- **Medium strength**: variable frequency/moderate intensity, somewhat likely to create behavior change in some of the target population, e.g. Safe Routes to School
- **High strength**: high frequency/high intensity, very likely to create behavior change in target population, e.g. changes to required physical activity minutes in schools

NEW IDEA

Future statewide analyses will preserve the spirit of this scoring system in that they will: (1) be integer-based for incorporation into quantitative analyses using PSE scores as continuous and categorical variables and (2) be systematically developed and applied to all school-based PSEs incorporated into KAN-Q analyses. The actual score assignments will be updated and expanded as more extensive PSE data becomes available across all LIAs.

In terms of the actual AMPS data analyses performed using PSE scores, we found that creating categorical variables (low vs. high score) from continuous ones did not improve the models.

NEW IDEA

The FFY18 data analysis will include a second round of comparison for continuous vs. categorical variables, as more PSE data will be available. If results reinforce the preferential use of continuous variables, this will help to both inform the PSE scoring system and to standardize future analyses.

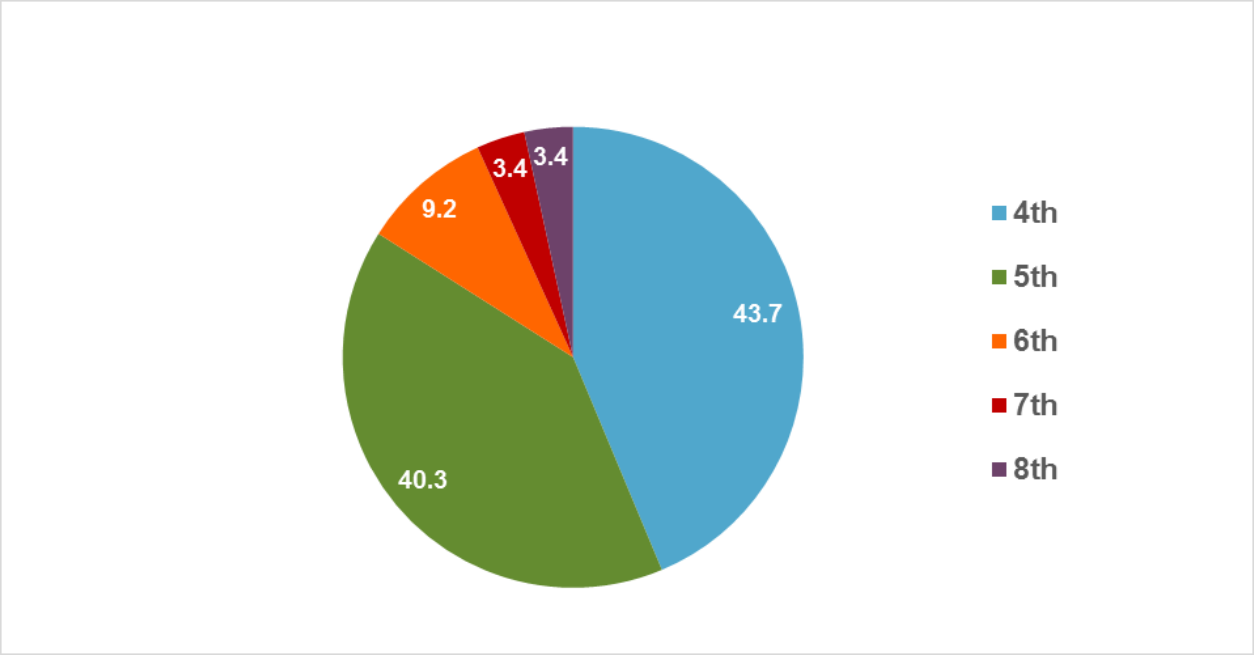
Table YDE-9. PSE Scoring System Developed for Incorporation into AMPS Data Analysis

Type of PSE Intervention	Score	Justification[a]
On-site Gardens, Direct Student Involvement	4	High reach (all students exposed or participate) High frequency (year-long or multi-season duration) Medium to high intensity **Medium to high strength**
Medium-term CSPAP Activity[2] (e.g. 8-week Run Club)	3	Moderate reach (some students participate) Moderate frequency (time limited) High intensity **Medium strength**
Train-the-trainer - CSPAP	2	Low to moderate reach Frequency unknown (varies by trainee) Moderate to high intensity (varies by trainee) **Low to medium strength**
Train-the-trainer - Curriculum	2	Low to moderate reach Frequency unknown (varies by trainee) Moderate to high intensity (varies by trainee) **Low to medium strength**
Train-the trainer - LWP	1	Low to high reach (depends on if changes made) Frequency unknown (varies by type of changes) Intensity unknown (varies by type of changes) **Low strength**
TA - LWP	1	No to high reach (depends on if changes made) Frequency unknown (varies by type of changes) Intensity unknown (varies by type of changes) **Low strength**
TA – Food Service	1	No to high reach (depends on if changes made) Frequency unknown (varies by type of changes) Intensity unknown (varies by type of changes) **Low strength**
One-time event - CSPAP	1	Medium to high reach Low frequency Low intensity **Low strength**

Note. PSE: Policies, Systems, Environment; CSPAP: Comprehensive School Physical Activity Programming; LWP: Local Wellness Policy; TA: Technical Assistance.[a] All Tempe Kids Zone activities are optional for students; PSEs listed here were provided to all students who chose to participate. [2] Year-round (long-term) CSPAP activity would be scored higher if present in future analyses.

Exploring Outcomes with School-Based Multi-level Interventions. Of the 119 matched pre-post KAN-Qs, 55 (42%) were female and the mean age of respondents was 10 years old. Figure YDE-9 shows participation by grade. Most (84%) were in 4th and 5th grade.

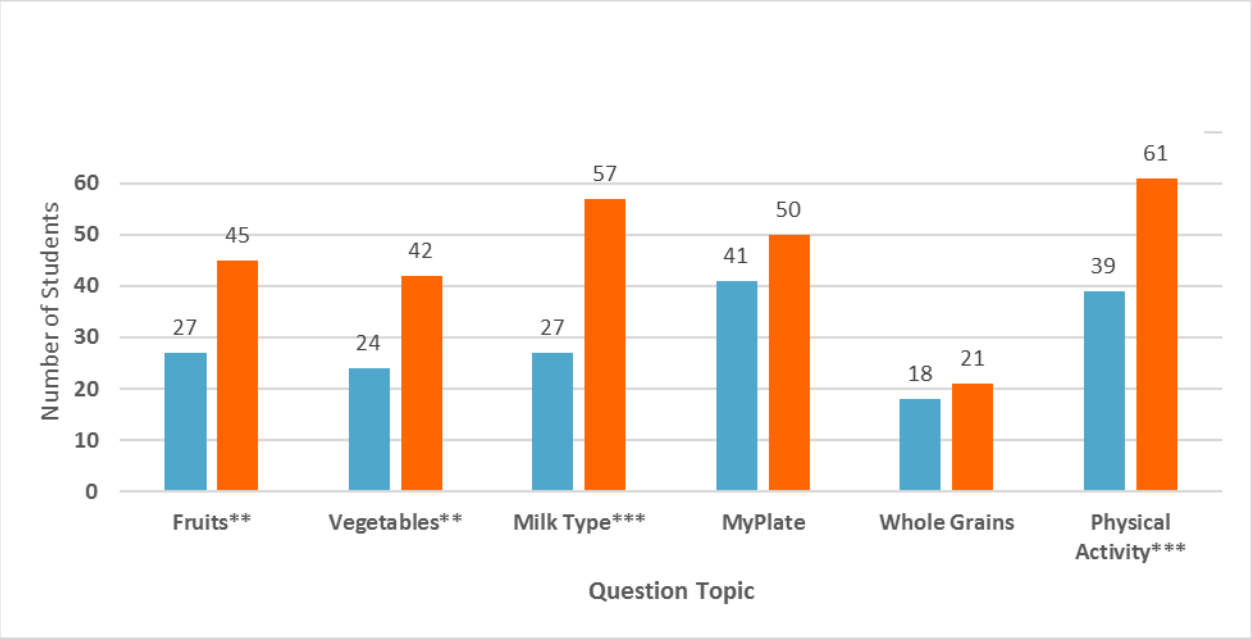
Figure YDE-9. Percent of AMPS Students by Grade, School Year 2016-17 (N=119)



Results of the KAN-Q pre-post data analysis are shown in Figures YDE-10 (knowledge) and YDE-11 (self-reported nutrition behaviors). Absolute increases in the number of students who answered the knowledge questions correctly were found across all items; these were highly significant for four of the six items: fruits, vegetables, milk type, and physical activity. The most notable changes in self-reported behaviors were for healthy grain consumption, a topic which did not experience a statistically significant increase in knowledge: There was a highly significant increase in whole grain consumption and a significant decrease in refined grain consumption. In terms of times per day that students reported consuming grains, this translates to an average increase of 0.41 more times/day eating whole grains and 0.35 fewer times/day eating refined grains.

Self-reported fruit consumption remained the same, while vegetable consumption increased significantly. However, Figure YDE-11 makes clear that fruit consumption was higher than vegetable consumption at both pre and post. No significant changes were found for physical activity, however the KAN-Q's physical activity subscale tested as less reliable and has since been improved.

Figure YDE-10. AMPS Students Who Correctly Answered Knowledge Questions Pre (Blue) and Post (Orange)



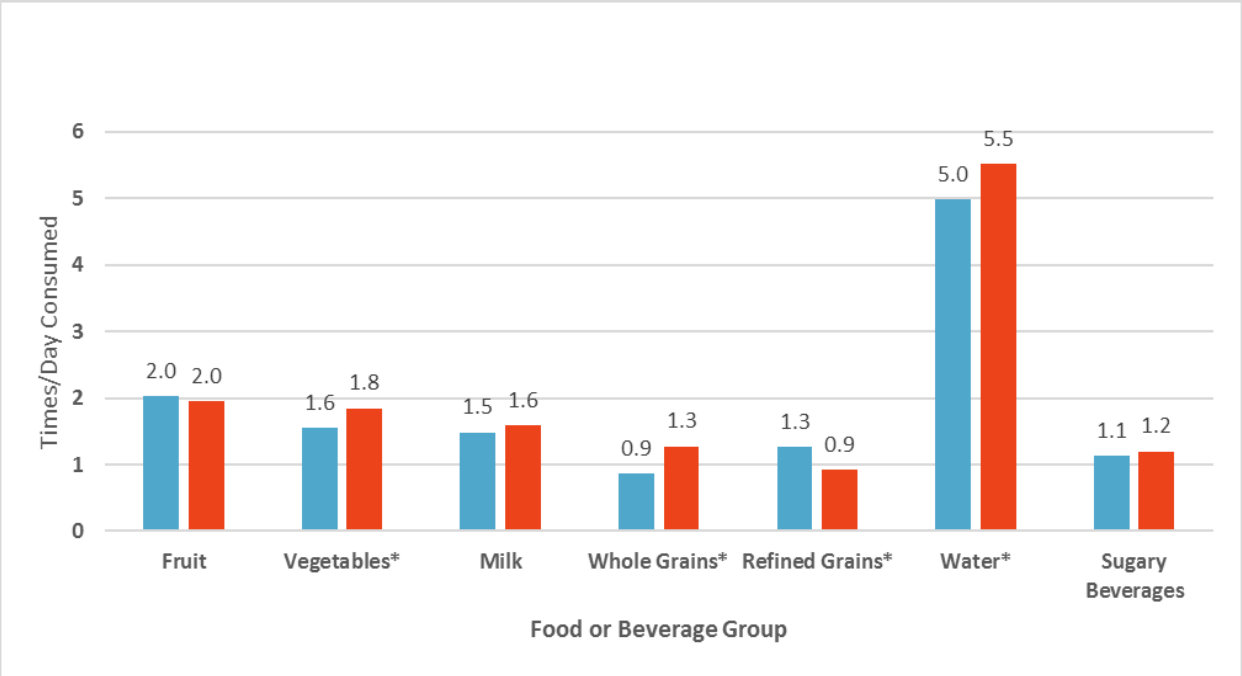
** Highly significant at p < 0.01, *** Very highly significant at p < 0.001

Further exploratory analyses were performed to determine whether any patterns emerged related to intervention type, however no clear associations could be determined. Preliminary results suggest that PSEs may be more effective in promoting physical activity, while direct education may be more effective in promoting healthy eating, however these results may be specific to TKZ's interventions. Reported PSEs from their sites included relatively more physical activity promotion, while curricula taught focused more on nutrition.

NEW IDEA

In FFY18, the SET plans to repeat the overall outcomes assessment (i.e., primary data analysis) with statewide data. We also plan for further exploratory analyses that include the contribution of PSEs only, DE only, and the synergistic effects of both. Other potential analyses may explore how the topical focus of PSEs and DE associate with pre-post changes.

Figure YDE-11. Mean Times per Day of Consumption Reported by AMPS Students, Pre (Blue) to Post (Orange)



* Significant at $p < 0.05$

Conclusion. Overall, these pilot findings are encouraging and suggest that multi-level interventions combining PSEs with DE may strengthen the effectiveness of school-based interventions.

KEY FINDINGS AND RECOMMENDATIONS

- In FFY17, LIAs successfully delivered a wider variety of behaviorally-focused DE curricula with PSE programming compared to the previous year.
- As in FFY16, the FFY17 outcomes evaluation of the *CATCH Basic Concepts* series, *Serving Up MyPlate*, and *Nutrition Voyage* revealed some knowledge gains but little behavior change beyond healthier milk intake. The recent revisions made to the KAN-Q for FFY18 should improve the AZ Health Zone's understanding of attitudes and physical activity behaviors.
- The categories in which change was measured varied somewhat from FFY16. This was likely due to the widespread use of *CATCH* with the KAN-Q in FFY17, which appears to have influenced milk knowledge and healthier milk consumption and may have promoted physical activity knowledge.
- There is widespread support from LIAs for the new KAN-Q administration model successfully piloted in FFY17, which enables more time for change to occur and captures the influence of multi-level interventions. Given that LIAs are planning more robust multi-level interventions in schools, the new model is timely.
- As LIAs expand DE into higher grades, the AZ Health Zone should consider adding new curricula for middle and high-school-aged students.

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Direct Education - Adult

Background

Arizona has an adult obesity rate of 29%,[1] and nearly 75% of adults statewide report inadequate fruit and vegetable consumption, with two counties exceeding 80%.[2] Nearly 19% of adults statewide report no leisure-time physical activity (PA), with higher rates in 10 counties and three counties exceeding 25% inactivity.[3] Given the need to improve healthy eating and active living among Arizona's adults, the AZ Health Zone has approved seven evidence-based adult curricula to be taught as single or series lessons. In FFY16, the State Evaluation Team (SET) limited the adult direct education (DE) evaluation to one four-lesson curriculum series: *MyPlate for My Family* (MPFMF). In FFY17, the SET expanded the evaluation of adult DE to two additional curricula: the six-lesson curriculum *Eat Healthy, Be Active* (EHBA), and the eight-lesson curriculum *Eating Smart, Being Active*.

A MPFMF class meeting.

The SET's primary goal in conducting FFY17's adult DE evaluation was to determine if these three series delivered by LIAs changed the behaviors of participants. A secondary goal was to explore differences in outcomes among the curricula. However, because of the small number of LIAs who chose to teach Eating Smart, Being Active, this ended up as a comparison of two curricula – MPFMF and EHBA. Direct education short-term (ST5, ST7) and medium-term (MT1, MT2, MT3) outcomes with adults in FFY17 are also reported in alignment with the National SNAP-Ed Evaluation Framework.

Methods

Adult SNAP-Ed participants in this evaluation: (1) participated in a MPFMF or EHBA class series offered by an LIA between October 2016 and September 2017, and (2) agreed to complete both the pre- and post-survey proctored by a trained LIA staff member. Although SNAP-Ed LIA staff taught class series on tribal lands, these participants were

not surveyed due to the absence of tribal Institutional Review Board agreements; therefore, tribal community participants are not reflected in the FFY17 data analysis, and the results underrepresent American Indian SNAP-Ed populations in our state.

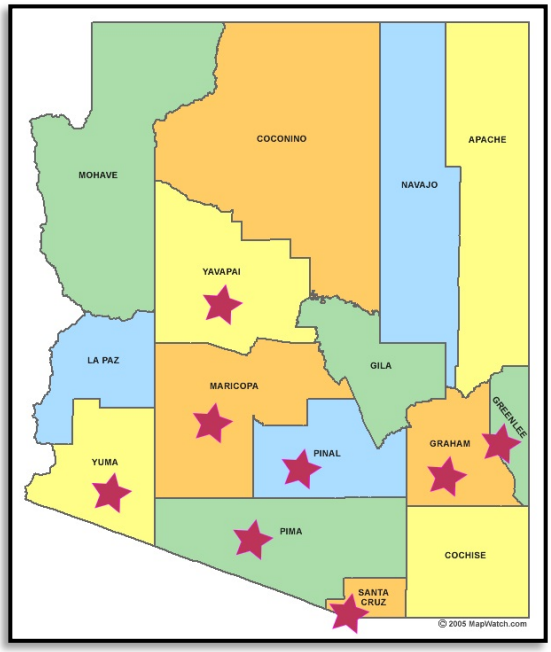


Figure ADE-1. County Participation in the FFY17 Adult DE Evaluation

In FFY17, 61 class series were evaluated with 184 individual adult participants, with a 56% retention rate for participants from pre to post. This may be an undercount, as some participants failed to provide information for pre to post survey matching, and others may have declined to complete surveys. Figure ADE-1 shows the location of the adult DE evaluation groups.

Prior to administering adult surveys in FFY17, all LIA staff proctors received a 30-minute refresher training based on previous training in FFY16. Each proctor was also required to pass a proctor certification quiz to ensure adherence to the data quality protocols. Trained LIA staff administered pre-surveys to participants immediately prior to the first lesson in a class series, and administered post-tests immediately following the final class in the series.

At each time point, the University of California Cooperative Extension's (UCCE) Food Behavior Checklist (FBC) was used (MT1, MT2).[4,5] The FBC is a visually enhanced 16-item self-report checklist that measures eating and shopping behaviors. It has been extensively validated with low-income populations and is available in English and Spanish. One limitation of this survey is that it does not ask about whole grain consumption. For PA behaviors, the UCCE On the Go survey was used (MT3),[6] which is a visually-enhanced 20-item questionnaire focusing on self-reported adult PA behaviors in the last seven days. It has been adapted for low-income audiences from the validated International Physical Activity Questionnaire[7] and combines English and Spanish within the same survey.

Data Entry and Analysis. Each of the pre and post survey packets, including a demographic cover sheet, the FBC, and the UCCE On the Go survey, were data entered and statistics (frequencies, means) were produced. The SET analyzed results across all participants as well as by curriculum. In the primary analysis, paired t-tests were used for continuous variables, and the McNemar test was applied to binary data, with Wilcoxon Signed Rank being used to assess changes in ordinal data. For the by-curriculum analysis, one-sample t-tests and the McNemar test were used for continuous and binary data respectively, and the Wilcoxon Rank Sum test was used to compare ordinal data between curricula. No data were imputed for skipped questions. In most cases, this only decreased the sample size for a particular question by a small amount – however in the case of "Met PA Recommendations," the statewide and by-curriculum sample size was very limited, as this value depended on responses to several different PA questions. Significance was set a priori at $p<0.05$. Stata version 13.1 (StataCorp LP, College Station, TX) was used for all statistical analyses.

In addition to quantitative analysis of the adult surveys, the SET engaged in qualitative analysis of LIAs' Semi-Annual Report Narratives (SARNs). NVivo v11.0 software facilitated coding and theme analysis of SARN text. Findings were considered in terms of LIA strengths and challenges, including readiness and capacity (ST5) to provide adult DE and settings-level partnerships (ST7) that facilitated provision of adult DE.

Results

Demographics. The adult DE evaluation reached individuals across eight counties in Arizona, with Maricopa and Pima counties providing the most participants. Table ADE-1 summarizes participation rates across counties.

A typical participant attending an adult DE class series was female, reported white or undisclosed race, and was aged 30-49, but these and other demographic characteristics, including language of survey completion (English or Spanish) varied by curriculum. Table ADE-2 presents a demographic summary for participants in the statewide adult DE evaluation, compared to participants who attended MPFMF (N=96) classes, and those who attended EHBA classes (N=88). The far right column summarizes statistically significant ($p<0.05$) differences observed.

Table ADE-1. Adult DE Evaluation Participants in FFY17, by County

COUNTY	Individuals' matched pre-post	Percent of analyzed group
Graham	8	4.3%
Greenlee	2	1.1%
Maricopa	97	52.7%
Pima	56	30.4%
Pinal	1	0.5%
Santa Cruz	14	7.6%
Yavapai	3	1.6%
Yuma	3	1.6%
ALL COUNTIES	**184**	**100%**

Table ADE-2. Participant Demographics for Matched Pre-Post Surveys, Statewide and By Curriculum, FFY17

Demographic	Statewide	MPFMF[a]	EHBA[b]	Differences By Curricula
Female	94.6%	97.9%	90.9%	More females in MPFMF
Hispanic	65.8%	83.3%	64.8%	More Hispanics in MPFMF
Completed Spanish Survey	52.7%	60.4%	44.3%	More Spanish surveys in MPFMF
White Race	56.0%	57.3%	54.6%	No difference
Undisclosed Race	33.7%	36.5%	30.7%	No difference
Age				Younger population in MPFMF
18 – 29	13.6%	12.8%	16.1%	
30 – 49	54.9%	73.4%	39.5%	
50 – 59	8.7%	8.5%	9.9%	
60+	17.9%	5.3%	34.6%	
Percent with Children at Home	65.2%	90.4%	48.0%	Higher % with children in MPFMF
Receiving SNAP Benefits	35.9%	29.8%	48.1%	Fewer received SNAP in MPFMF

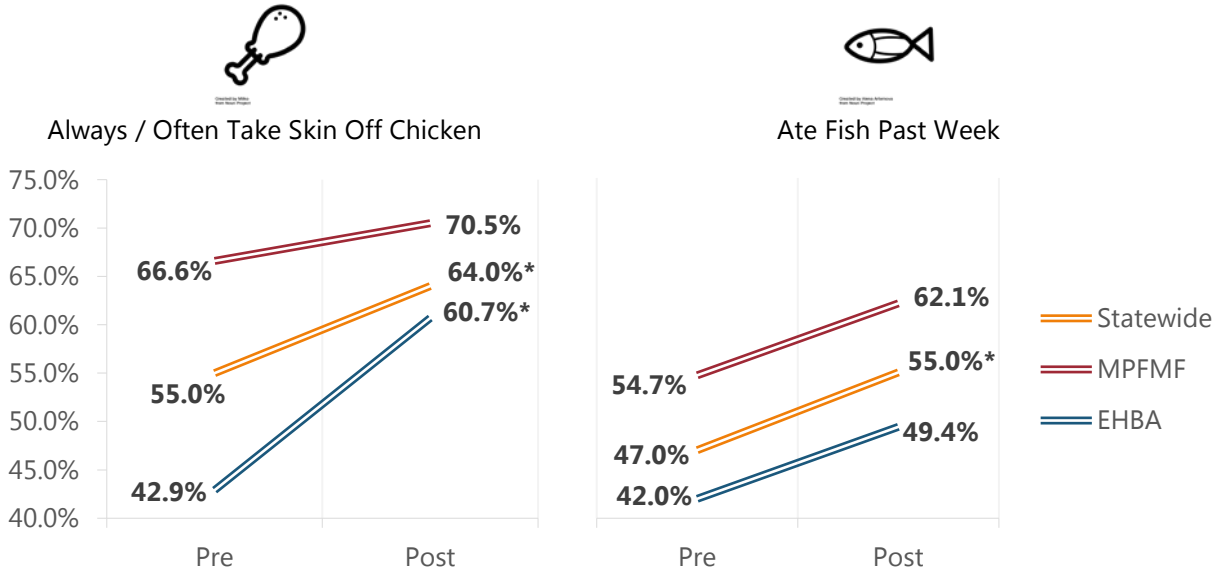
[a]MPFMF = MyPlate for My Family [b]EHBA = Eat Healthy, Be Active

Healthy Eating Behaviors (MT1). Healthy eating behaviors have many dimensions, and both the MPFMF and EHBA curricula focus on key behavioral outcomes for SNAP-Ed, although EHBA places emphasis on a few additional factors:

MPFMF, EHBA Topics	EHBA Topics Only
• Increasing familiarity with MyPlate • Clarifying proper portion sizes • Encouraging fruit and vegetable consumption	• Choosing healthier fats • Reducing salt • Reducing added sugar • Increasing whole grains

Protein foods (MT1a). Figure ADE-2a and b summarizes findings about lean protein foods. Statewide and by curriculum, there was improvement in taking the skin off chicken. Individuals taking the EHBA curriculum were significantly more likely to improve this behavior relative to those taking MPFMF (17.8% improvement versus 3.9% improvement, $p<0.05$ for difference). Fish consumption rose across time as well, reaching statistical significance ($p<0.05$) in the statewide group.

Figure ADE-2a and b. Change in Lean Protein Consumption, FFY17

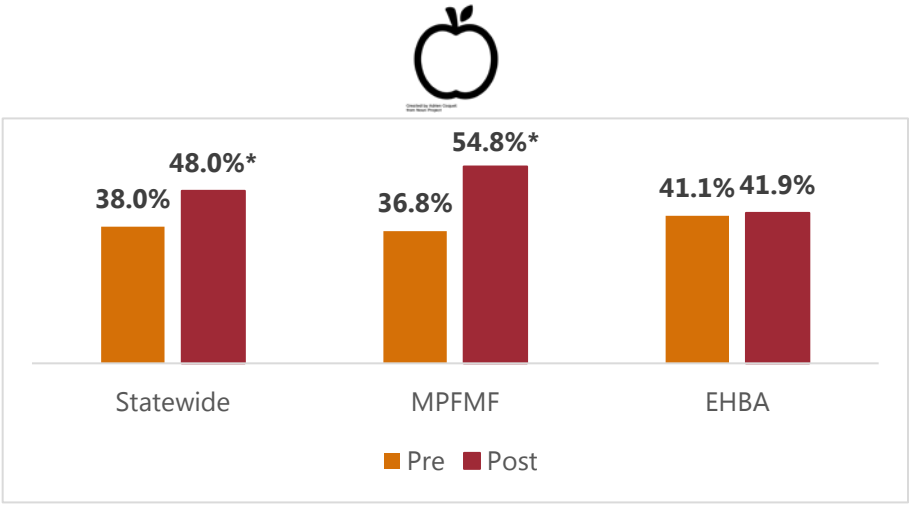


* statistically significant increase at $p<0.05$

Fruits and Vegetables.

Eating more than one kind of fruit (MT1b). After adult DE, participants improved their behavior related to eating more than one type of fruit each day. Statewide and MPFMF changes were significant, indicated in Figure ADE-3.

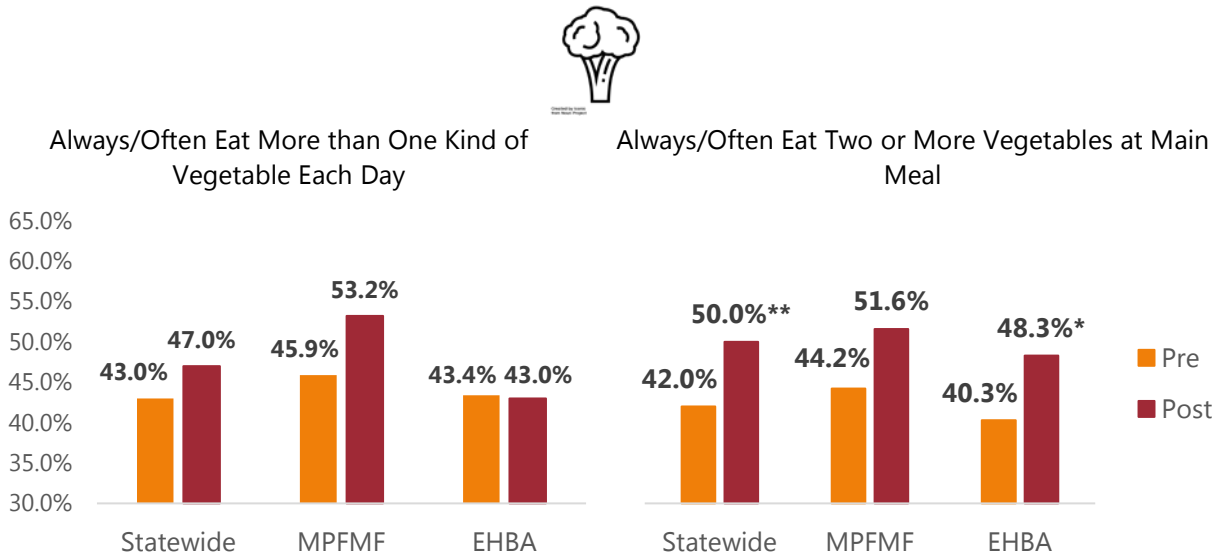
Figure ADE-3: Change in Consuming More than One Kind of Fruit per Day



* statistically significant increase at p<0.05

Eating more than one kind of vegetable (MT1d). Figures ADE-4a and b summarize findings about vegetable consumption. The statewide and MPFMF increases in percent of respondents who ate more than one kind of vegetable each day were not statistically significant. However, statewide and among EHBA participants, there was a significant improvement in eating two or more vegetables at the main meal.

Figure ADE-4a and b. Change in Vegetable Consumption, FFY17

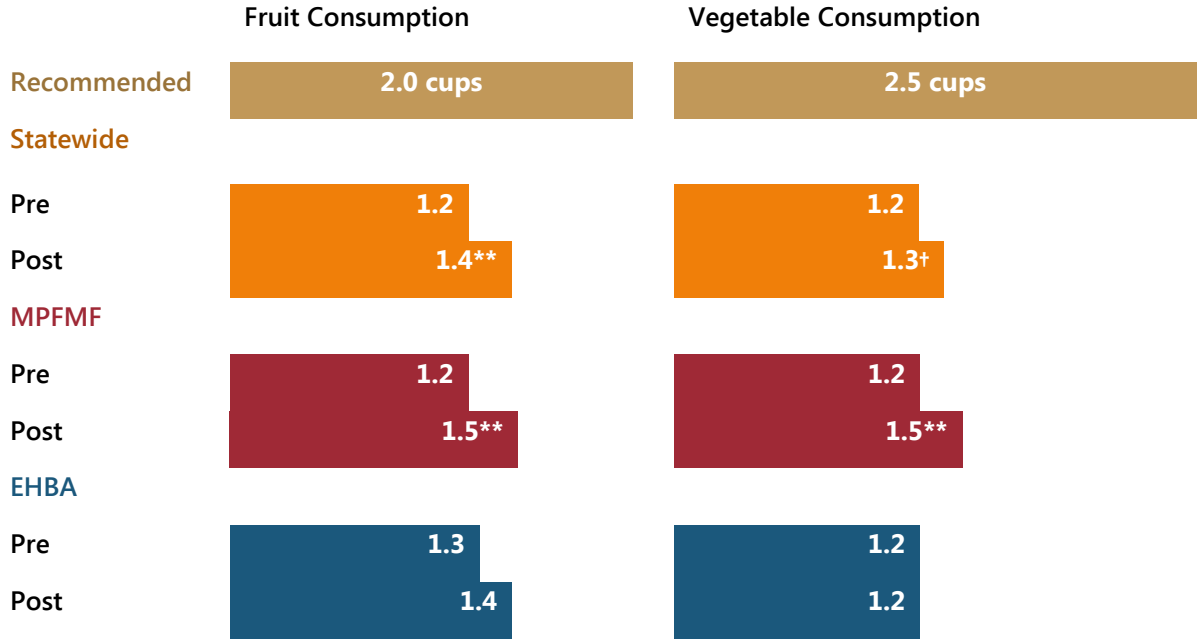


* statistically significant increase at p<0.05, ** statistically highly significant change at p<0.01

Daily fruit (MT1l) and vegetable (MT1m) consumption. Mean daily fruit consumption increased significantly from pre to post for the statewide and MPFMF groups (Figure ADE-5 below), but still fell short of fruit consumption goals set out in the 2015-2020 Dietary Guidelines for Americans (DGA), which are 2 cups per day following a 2,000 calorie diet.[8]

The mean increase in daily vegetable consumption for the statewide group showed a trend to significance that can be attributed to the significance increase in the MPFMF group (Figure ADE-5). Again, however, mean consumption fell short of the DGA vegetable recommendation (2.5 cups per day following a 2,000 calorie diet[8]).

Figure ADE-5. Change in Mean Daily Fruit and Vegetable Consumption, FFY17

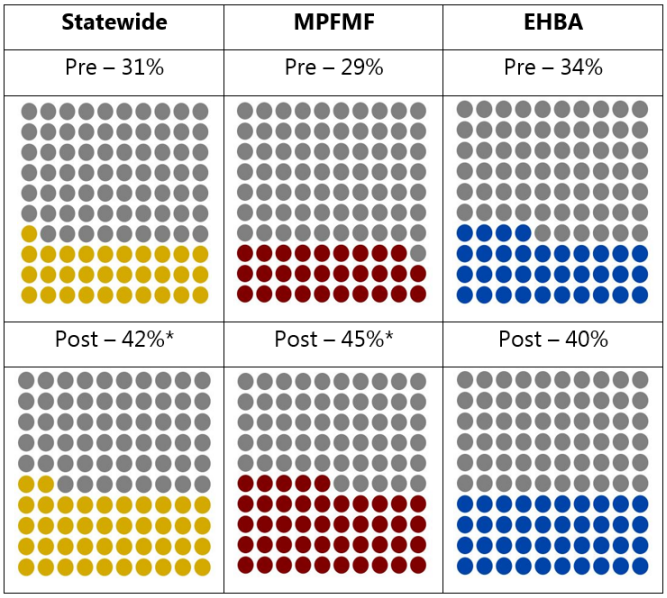


DGA recommendations for fruit (left) and vegetable (right) in cups shown in brown. Results scaled for comparability to recommendations.

† trend to significance at 0.05<p<0.10; * statistically significant increase at p<0.05, ** statistically highly significant change at p<0.01

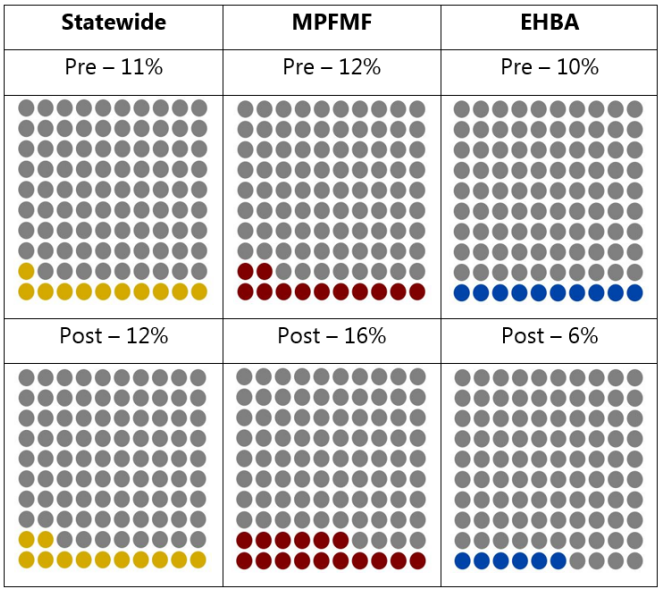
Beyond mean intake, some positive findings emerged for the percent of participants who met the DGA fruit recommendations at pre and post (Figure ADE-6). At pre, 31% were meeting daily fruit guidelines. At post, this had significantly improved, to 42%. The MPFMF group also improved significantly between pre and post. Importantly, ***findings for vegetables showed little change*** (Figure ADE-7). Eleven percent of adult DE participants statewide were meeting daily vegetable guidelines, and this only rose to 12% at post. For the EHBA curriculum, the percent of participants meeting the DGA recommendation for vegetables declined from 10% to 6%.

Figure ADE-6. FFY17 Percent of Respondents Who Met Daily Fruit Guidelines[a], by Curriculum



[a] DGA daily fruit guideline = 2 cups
* statistically significant increase at p<0.05

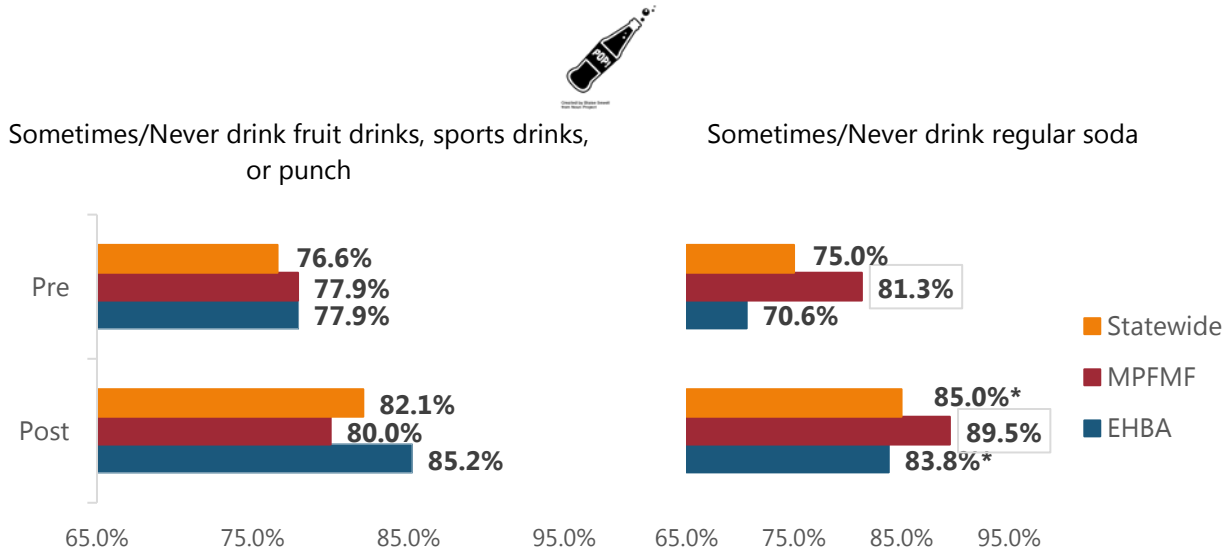
Figure ADE-7. FFY17 Percent of Respondents Who Met Daily Vegetable Guidelines[a], By Curriculum



[a] DGA daily vegetable guideline = 2.5 cups

Drinking fewer sugar-sweetened beverages (MT1h). Figures ADE-8a and b reveal a small, non-significant decrease in fruit drink consumption for the statewide group and a significant decrease in regular soda consumption or the statewide and EHBA groups after nutrition education.

Figure ADE-8a and b. Change in Sugar-Sweetened Beverage Consumption, FFY17



* statistically significant decrease in consumption at $p<0.05$

Food Resource Management Behaviors (MT2). For food resource management, both the MPFMF and EHBA curricula focus on:

- Offering tips on saving time and money when food shopping
- Encouraging planning and preparing of healthy meals and snacks

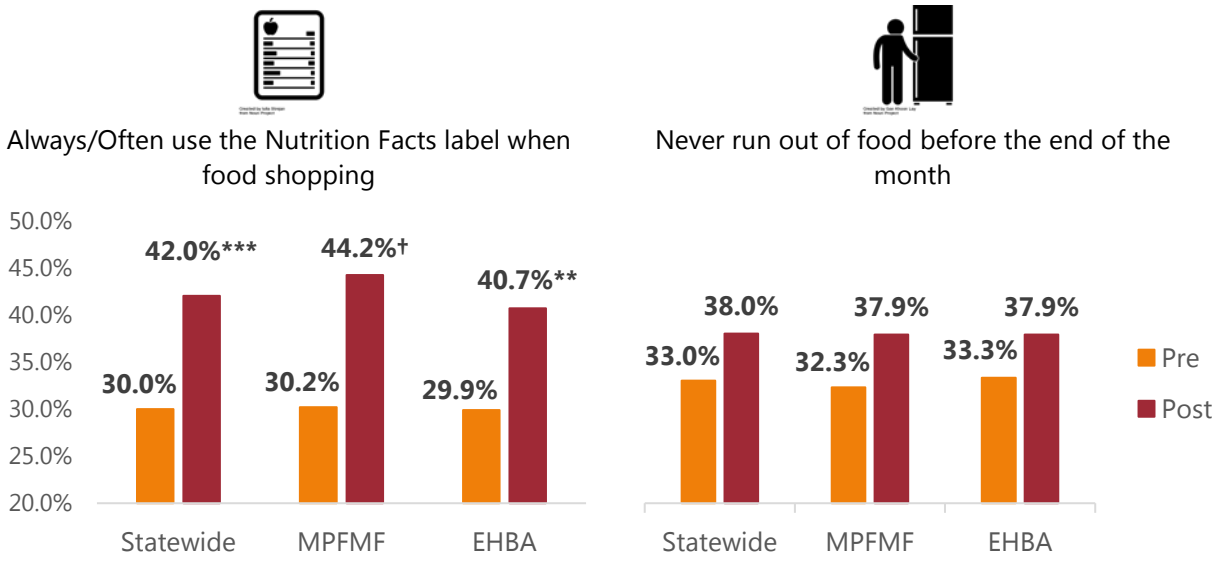
In addition, the EHBA curriculum focuses on

- Reading and understanding the Nutrition Facts label

Use of the Nutrition Facts label (MT2b) increased significantly statewide and among the EHBA group, while there was a trend-level increase among MPFMF class participants (Figure ADE-9a).

Running out of food before month's end (MT2g) showed a slight, non-significant decrease (Figure ADE-9b). Beyond individuals who reported that they *never* ran out of food before the end of the month, an examination across the entire spectrum of frequency indicated that there was no significant change in food security in any of the groups. In FFY16, the SET noted differences in food insecurity between English and Spanish speakers – namely, that Spanish-speakers were more food-insecure at the time of the pre-survey, however this difference was not seen in the FFY17 data.

Figure ADE-9a and b. Change in Food Resource Management Behaviors, FFY17



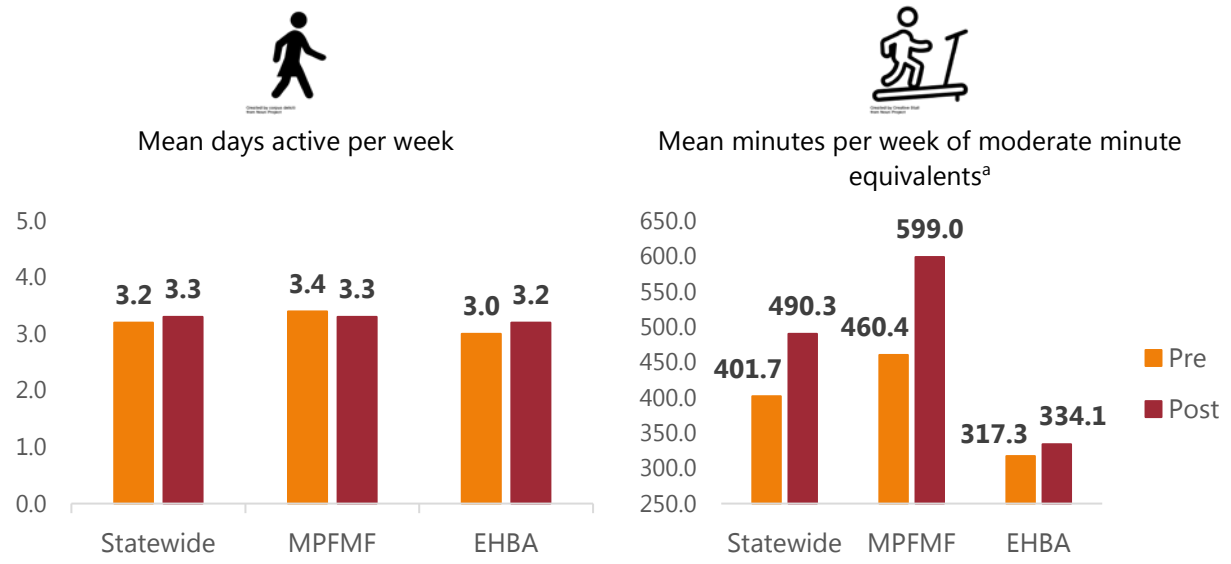
† trend to significance at 0.05<p<0.10; * statistically significant increase at p<0.05, ** statistically highly significant change at p<0.01, *** statistically very highly significant increase at p<0.001

Physical Activity Behaviors (MT3). For physical activity (PA), both the MPFMF and EHBA curricula focus on increasing regular PA for adults (and in MPFMF, their families), with a specific focus on PA during the last class of the series for both curricula.

Figures ADE-10a and b show findings for PA behaviors, including **days in the last week individuals engaged in PA and general leisure sport (MT3a)** and **amount of PA in the last week which caused individuals to breathe harder than normal (MT3b)**. Neither of these indicators changed significantly between pre and post. In FFY16, the SET found that Spanish speakers showed higher levels of PA at the time of the pre-survey, measured both by minutes active and by days active. In FFY17, there was no difference

between language groups in days active, and only a trend-to-significance for Spanish-speaking participants reporting more moderate minute equivalents (a combined value for moderate and vigorous activity, calculated using Moderate + 2*Vigorous).

Figure ADE-10a and b. Change in Physical Activity Behaviors, FFY17

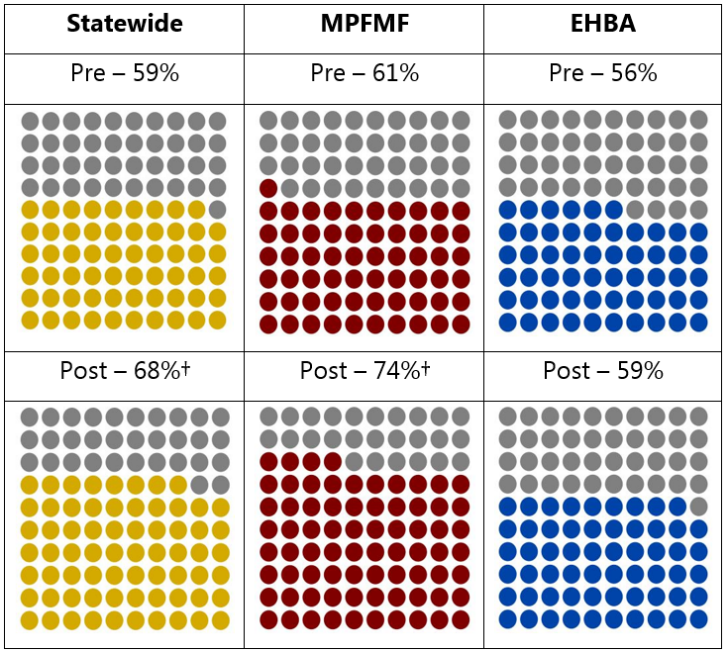


[a] Moderate minute equivalents = Moderate + (2 x Vigorous activity minutes)

Figure ADE-11 presents the percentage of class participants who met the Physical Activity Guidelines for Americans (PAGA) recommendations for moderate/vigorous physical activity at pre and post. Considering moderate-minute equivalents, the recommendation for adults ages 18-64 is 150 minutes of activity per week.[8] Both the statewide and MPFMF groups showed a trend to significance toward improved PA, increasing from 59% to 68% in the statewide group, and 61% to 74% in the MPFMF group. Of note, percentages of individuals meeting PAGA recommendations far exceeded those meeting dietary recommendations.

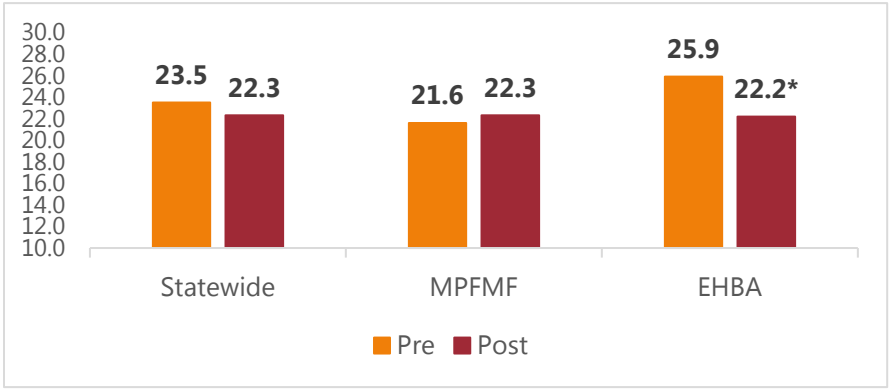
Hours spent seated on a weekday and weekend day in the last week (MT3i). Hours spent seated, calculated as a weekly mean (incorporating both weekday and weekend values), showed a significant reduction (-3.7 hours) in the EHBA group, only (Figure ADE-12). The MPFMF group slightly increased their reported sitting time (+0.7 hours).

Figure ADE-11. FFY17 Percent of Respondents Who Met Weekly PA Guidelines, By Curriculum



† trend to significance at 0.05<p<0.10

Figure ADE-12: Change in Hours Spent Sitting per Week, FFY17



* statistically significant decrease in sitting at p<0.05

Strengths and Challenges in Adult DE

In narrative reports, LIAs emphasized several strengths in their adult DE programs, including fruitful partnerships, expanding capacity, and retaining adult participants. LIAs also mentioned several challenges to delivering successful adult DE, many of which were the converse of the strengths they described. These included challenges with partnerships, declining capacity, and difficulty retaining adult participants. These challenges are discussed below, alongside their related strengths. An additional and ongoing challenge was the suitability of adult curricula in meeting expressed needs of the SNAP-eligible population in Arizona.

Fruitful Partnerships(ST7). Many LIAs described how they had built settings-level partnerships that were now paying off in terms of allowing LIA staff access to adults who were enthusiastic about learning about healthier behaviors.

> "We are providing Direct Education services to a rural medical center in partnership with Indian Health Services. The first DE lesson that our staff provided had 103 individuals present. In a four-month period, these families will graduate and another set of families will start."

Partner agencies were highlighted in LIA narratives as central to success in adult DE, including local health departments, medical centers, Indian Health Services, tribal organizations, WIC programs, senior-services agencies, community centers, food banks, low-income housing sites, emergency shelters, libraries, DES agencies, afterschool programs, Head Start programs, grocery stores, and refugee agencies.

> "Not only were [the library staff] excited to offer this class series at their site, they also agreed to help advertise this series in their monthly newsletter that reaches all library card-holders and on their Facebook page."

Expanding Capacity. LIA staff expanded capacity for adult DE in a number of ways (ST5). These included reaching out to additional eligible sites and increasing classes offered at existing sites. LIA staff also excelled at building opportunities for adults to interact with SNAP-Ed in new ways, including: 1) offering classes to adults and children together, 2) reaching parents through Head Start parent meetings or parent-teacher organizations, 3) responding directly to participants' requests related to education, and 4) training tribal community members to provide DE lessons at youth and adult sites.

> "We have learned what works and what does not concerning scheduling, marketing, delivery, and general success of our [adult] series. Pairing a food demonstration with a recipe from the curriculum or the state agency website has helped us with better retention for our series."

Challenges with Partnerships and Declining Capacity. In contrast, LIAs that described partnership challenges and declining capacity often referenced staff turnover and the resultant need for rebuilding relationships. In some cases, site partner schedules were at odds with LIA plans for adult DE. For example, a class scheduled at lunchtime at a senior site was good for nutrition education, but precluded active engagement in physical activities because the seniors were eating lunch.

Retaining Adult Participants. As LIAs expanded their capacity to offer adult DE, they were also often more successful in recruiting and retaining adults for a full class series. Both urban and rural LIAs showed this improvement. Common success factors included:

- Increasing awareness of SNAP-Ed within communities.
- Stronger personal relationships between SNAP-Ed instructors and participants or site staff.
- Increased interest in healthy living topics as a result of participating in DE.
- Individuals with friends engaging in SNAP-Ed (gardening, food demonstration) were more likely to join in, especially when coupled with a personal recommendation or testimonial.

Success in retaining adults also led to more opportunities to learn the changes that they had made as a result of participating in SNAP-Ed.

> "One participant from the senior center shared that since he tried hummus at a food demonstration; he has replaced his sour cream dip with it and is now using carrot instead of chips for his evening snack. That change alone has helped him drop five pounds."

Although increasing adult participation was a strength for some LIAs, in other counties the LIAs perceived themselves as falling short in reaching adults with respect to initial recruitment, retention, and evaluation. Common challenges expressed were:

- Difficulty recruiting participants because of:
  - limitations in who was reached by certain types of publicity
  - the advent of people signing up but not showing up for a class
  - LIAs' inability to meet participants' requests for add-on activities, such as a hands-on cooking class
- Difficulty retaining, and thus evaluating, the same participants across a class series due to participants' work schedules and/or transportation difficulties.
- Limited variability in adult curricula, leading to duplication of significant information for those attending multiple class series.
- Challenges with partner sites in moving beyond single-session lessons.

Challenge of suitable adult curricula. LIA staff noted that approved adult curricula did not necessarily meet the expressed needs of their adult participants. For example, adults desired hands-on instruction on cooking and gardening, which had limited or no SNAP-Ed curricular support in FFY17. In addition, the AZ Health Zone's approved adult curricula were not always deemed appropriate for Latino/a or tribal audiences. Similar curricular needs and barriers were expressed by LIAs via the AZ Health Zone partner support and services evaluation in July 2017.

> "The challenge of providing culturally relevant education to our many predominantly Latino and Native American sites continues. Approved curricula do not necessarily meet the needs of these sites."

Multi-level Intervention Highlights

Addressing Individual, Site, and Community Needs to Support Healthy Lifestyles in Maricopa. The Maricopa County Department of Public Health (MCDPH), through their work in partnership with their subcontractor the Desert Mission Food Bank, excelled in multi-level interventions that addressed individual, site, and community needs. At the individual level, a strength has been in delivering well-received food demonstrations at the food bank. As the LIA continues to address PSE changes in the food bank's surrounding community, MCDPH staff will increase DE offerings at the site.

At the settings level, the food bank is focusing on increasing the amount of healthy food donated, purchased and distributed. With guidance from MCDPH, the food bank included the implementation of a Standard Nutrition Policy into their three-year strategic plan. These policy changes will increase the healthfulness of the food donated to the bank and subsequently distributed.

> "SNAP-Ed staff helped the food bank adopt the Foods to Encourage Model and Choosing Healthy Options Program (CHOP) as the basis of [their] nutrition policy and inventory process. These policies coincide with the Desert Mission pilot at a local hospital to screen patients for food insecurity and refer [them] to the Desert Mission Food Bank. Connecting patients to healthy food will play a significant role in [improving] health outcomes."

At the sectors level, the food bank has been a partner in the MCDPH's healthy retail work to increase fresh fruit and vegetable access in the community (see the Healthy Retail highlight in this report). It has also been a site where MCDPH has reached out to community members to improve the usability of a free local circulator bus. An outcome of FFY17 discussions between Desert Mission, the local transit authority, and other stakeholders was a commitment by the transit authority to add key health, recreation, food access and food assistance sites to their published circulator route maps by April 2018.

KEY FINDINGS AND RECOMMENDATIONS

- Adult DE participants showed more improvement in food behaviors than in PA behaviors, in contrast to FFY16, when PA improved more.
- The two assessed curricula reached different audiences, with MPFMF participants significantly more likely to be female, Hispanic, under 50 years old, and less likely to receive SNAP benefits than EHBA participants.
- MPFMF series attendance increased daily fruit and vegetable consumption. EHBA series attendance improved lean protein consumption, vegetable consumption, and nutrition label use. EHBA participants also decreased soda consumption and time spent sitting. LIAs may consider offering both of these series to the same audiences, as they appear to affect different behaviors.
- More adult DE participants were able to meet the DGA goals for fruit than for vegetables. The AZ Health Zone should consider investigating specific barriers to vegetable consumption in order to enhance DE efforts.*
- LIAs have made progress since FFY16 in linking DE to PSEs, but there are still unexplored opportunities to connect participants to local healthy eating and active living resources and opportunities as PSE work gains momentum.
- Spanish speakers reported somewhat higher levels of PA at baseline. LIAs should consider how to tailor DE interventions with Spanish-speaking audiences to address *maintenance* as well as *preparation and action* related to PA.*

*Recurring recommendation from FFY16

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Appendix A: List of Acronyms

ADE	Arizona Department of Education
ADHS	Arizona Department of Health Services
AMPS	Assessment of Multi-level Interventions Piloted in Schools
ASBA	Arizona School Boards Association
CACFP	Child and Adult Care Food Program
CATCH	Coordinated Approach to Child Health
CSPAP	Comprehensive School Physical Activity Programming
DE	Direct Education
DES	Department of Economic Security
DGA	Dietary Guidelines for Americans
EARS	SNAP-Ed Education and Administrative Reporting System
EBT	Electronic Benefit Transfer
ECE	Early Childcare Education
EHBA	Eat Healthy, Be Active (an AZ Health Zone approved curriculum)
FBC	University of California Cooperative Extension Food Behavior Checklist
FFY	Federal Fiscal Year (October 1st – September 30th)
FTI	Farm to Institution
HAPI	Health in Arizona Policy Initiative
HHKA	Healthy Hunger-Free Kids Act
HSP	Healthy Schools Program (from the Alliance for a Healthier Generation)
IOM	Institute of Medicine
KAN-Q	Kids' Activity and Nutrition Questionnaire
LEA	Local Education Agency
LIA	Local Implementing Agency for SNAP-Ed
LWP	Local Wellness Policy
MOU	Memorandum of Understanding

MPFMF	MyPlate for My Family (an AZ Health Zone-approved curriculum)
NACOG	Northern Arizona Council of Governments
NAP SACC	Nutrition and Physical Activity Self-Assessment for Child Care
NASPE	National Association for Sport and Physical Education
NHSAC	National Healthy Schools Award Checklist
PA	Physical Activity
PAGA	Physical Activity Guidelines for Americans
PARA	Physical Activity Resource Assessment
PE	Physical Education
POD	Point of Decision
PHA	Public Health Approach
PSE	Policy, Systems, and Environment
SARN	Semi-Annual Report Narrative
SART	Semi-Annual Report Table
SEEDS	SNAP-Ed Electronic Data System
SEM	Socio-Ecological Model
SET	AZ Health Zone State Evaluation Team
SFSP	Summer Food Service Program
SHAC	School Health Advisory Committee
SIT	AZ Health Zone State Implementation Team
SNAP	Supplemental Nutrition Assistance Program (formerly Food Stamp Program)
SNAP-Ed	Supplemental Nutrition Assistance Program - Education
STORE	Store Opportunities in the Retail Environment
UA	University of Arizona
UCCE	University of California Cooperative Extension
USDA	United States Department of Agriculture
WCFI	Wilder Collaboration Factors Inventory
WIC	Special Nutrition Program for Women, Infants and Children

Appendix B: FFY17 Arizona SNAP-Ed Evaluation Framework Matrix[1]

Highlighted areas found in parentheses in this matrix indicate specific data collection tools. See the key at the end of this document to identify acronyms. Items in blue bold (ex., **ST5**) designate national SNAP-Ed Evaluation Framework indicators.

Strategy Number	Description of Strategy	INTENDED REACH	PROCESS INDICATOR	STO (0-1 Yr) INDICATORS	MTO (2-3 Yrs) INDICATORS	LTO (3-5 Yrs) INDICATORS	LONGER TO (5+ Yrs) INDICATORS	LONGEST TO (7+ Yrs) INDICATORS
1	**Increase availability of healthy food retail**, including mobile vendors, farmers' markets, corner/country stores, and grocery stores.	Number of communities that will be reached (SART)	% of communities reached (SART) % of retailers assessed (SART) Number assessments completed / Number intended for assessment	ST5,6,7,8 Qualitative data re: healthy food retail readiness and capacity, champions, and/or partnerships (SARN)	MT5,7 Scores for healthy retail PSEs, Year 2 (STORE)	MT5,7 Increase in scores for healthy retail PSEs, Year 4 (STORE)	LT10,12 Sustained increase in scores for healthy retail PSEs, Year 6 (STORE) R2 % of low-income adults who meet fruit and vegetable guidelines (BRFSS)	R9 % of low-income adults in Arizona who are overweight and % who are obese (BRFSS) R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS)
			SINGLE PARTNER TRACK Number of meetings with leaders/ managers (SART) Number of leaders/managers met with/trained (SART)					
			COALITION TRACK Number of meetings with multi-sector partnerships(SART)	ST8 Scores for multi-sector partnerships, Year 1 (WCFI)	ST8 Increase in scores for multi-sector partnerships, Year 3 (WCFI)	ST8 Increase in scores for multi-sector partnerships, Year 5 (WCFI)		

1 Revised August 2016 for use in Fiscal Year 2017

Strategy Number	Description of Strategy	INTENDED REACH	PROCESS INDICATOR	STO (0-1 Yr) INDICATORS	MTO (2-3 Yrs) INDICATORS	LTO (3-5 Yrs) INDICATORS	LONGER TO (5+ Yrs) INDICATORS	LONGEST TO (7+ Yrs) INDICATORS
2	**Encourage participation in** community, home, school, and child care **gardens.**	Number of communities where gardens will be promoted (SART)	% of communities reached (SART) Number of meetings with community/site leaders (SART) Number of community and site leaders met with/trained (SART) Number of gardening trainings provided to SNAP eligibles (EARS) Number of SNAP eligibles who receive gardening training (EARS)	ST5 Qualitative data related to readiness and capacity for gardening (SARN) ST5 Baseline number of gardens in communities reached, Year 1 (SART)	MT5 Qualitative data related to adoption of garden supports (SARN) MT5 Increase in number of gardens in communities reached, Year 3 (SART)	LT5 Qualitative data re: implementation of garden supports (SARN) LT5 Sustained increase in number of gardens in communities reached, Year 5 (SART)	LT10 Number schools/ child care programs certified by ADHS to serve garden produce onsite (SART) R2 % of low-income adults who meet fruit and vegetable guidelines (BRFSS) R2 Behavior change among youth toward increased adherence to national guidelines for fruits and vegetable intake (YRBSS)	R9 % of low-income adults in Arizona who are overweight and % who are obese (BRFSS) R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS)

Strategy Number	Description of Strategy	INTENDED REACH	PROCESS INDICATOR	STO (0-1 Yr) INDICATORS	MTO (2-3 Yrs) INDICATORS	LTO (3-5 Yrs) INDICATORS	LONGER TO (5+ Yrs) INDICATORS	LONGEST TO (7+ Yrs) INDICATORS
3	Start and expand **Farm to School, Farm to Child Care, Farm to Worksite** programs.	Number of sites that will be reached (SART)	% of sites reached (SART)	ST5,6,7,8 Qualitative data re: Farm to Institution readiness & capacity, champions, and/or partnerships (SARN)		MT8,LT5 Increase in the % of sites reached that participate in a Farm to Institution program, Year 5 (SART) LT12c Jurisdictional support for marketing of locally grown foods for Farm to Institution programs, Year 5 (TBD)	LT10 Sustainability Plan – % of farm to institution sites that have multi-year contracts in place (SART) <or> Number Schools/child care programs certified by ADHS to serve garden produce onsite (SART) R2 Behavior change among youth toward increased adherence to national guidelines for fruits and vegetables (YRBSS) R2 % of low-income adults who meet fruit and vegetable guidelines (BRFSS)	R9 % of low-income adults in Arizona who are overweight and % who are obese (BRFSS) R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS)
			SINGLE PARTNER TRACK					
			Number of meetings/trainings with leaders (SART) Number of leaders/managers met with/trained (SART)	ST5 % of sites reached that have an action plan, Year 2 (SART)	MT5 % of sites reached that are implementing action plans, Year 4 (SART)			
			COALITION TRACK					
			Number of meetings with multi-sector partnerships (SART)	ST8 Scores for multi-sector partnerships, Year 1 (WCFI)	ST8 Increase in scores for multi-sector partnerships, Year 3 (WCFI)	ST8 Increase in scores for multi-sector partnerships, Year 5 (WCFI)		

Strategy Number	Description of Strategy	INTENDED REACH	PROCESS INDICATOR	STO (0-1 Yr) INDICATORS	MTO (2-3 Yrs) INDICATORS	LTO (3-5 Yrs) INDICATORS	LONGER TO (5+ Yrs) INDICATORS	LONGEST TO (7+ Yrs) INDICATORS
4	**Support** implementation and promotion of **the Summer Food Service Program (SFSP).**	Number of communities that will be reached (SART)	% of communities reached (SART) Number of meetings with current and/or potential SFSP leaders (SART)		MT5 Qualitative data related to SFSP supports adopted, Year 2 (SARN)	LT5 Qualitative data related to the SFSP supports adopted, Year 4 (SARN)	R1,2,4,5,7 Behavior change among youth toward increased adherence to national dietary guidelines (YRBSS)	R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS)
			EXISTING SFSPs					
			Number SFSP assessments completed / Number intended for assessment (SART)	ST5 Scores for SFSP assessment, Year 1 (SFSPC)	MT5 Increase in SFSP assessment scores, Year 3 (SFSPC)	LT5 Increase in SFSP assessment scores, Year 5 (SFSPC)	LT10 Sustainability Plan – Formalized concurrent programming at SFSP sites, institutionalized marketing and outreach plans in place (SART)	
				NEW SFSPs				
				ST5 Number of current SFSPs in communities reached, Year 1 (SART)	MT5 Increase in number of SFSP sites, Year 3 (SART)	LT5 Increase in number of SFSP sites, Year 5 (SART)		

Strategy Number	Description of Strategy	INTENDED REACH	PROCESS INDICATOR	STO (0-1 Yr) INDICATORS	MTO (2-3 Yrs) INDICATORS	LTO (3-5 Yrs) INDICATORS	LONGER TO (5+ Yrs) INDICATORS	LONGEST TO (7+ Yrs) INDICATORS
5	**Encourage use of farmers' market with SNAP and WIC access** at key community outlets.	Number of farmers' markets where SNAP/WIC redemptions will be encouraged (SART) Number of partner sites where the use of SNAP/WIC at farmers' markets will be promoted (SART)	% of farmers' markets reached (SART) Number of farmers' market managers met with/trained (SART) % of partner sites reached (SART) Number of partner staff met with/trained (SART)	ST5 Qualitative data re: readiness and capacity for providing SNAP and WIC access at farmers' markets (SARN) ST5 % of farmers' markets reached that accept SNAP/WIC redemptions, Year 1 (SART) ST5 WIC/SNAP redemptions as a % of total sales at farmers' markets reached, Year 1 (SART)	MT5,8 Increase in % of farmers' markets reached that accept SNAP/WIC redemptions, Year 3 (SART) MT5,8 Increase in WIC/SNAP redemptions as a % of total sales at sites reached, Year 3 (SART)	LT5,14 Sustained increase in WIC/SNAP redemptions as a % of total sales at sites reached, Year 5 (SART)	LT10,14 Planned Sustainability – At least 70% of farmers' markets reached accept SNAP/WIC redemptions, Year 5 (SART) R2 % of low-income adults who meet fruit and vegetable guidelines (BRFSS) R2 Behavior change among youth toward increased adherence to national dietary guidelines for fruits & vegetables (YRBSS)	R9 % of low-income adults in Arizona who are overweight and % who are obese (BRFSS) R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS)

Strategy Number	Description of Strategy	INTENDED REACH	PROCESS INDICATOR	STO (0-1 Yr) INDICATORS	MTO (2-3 Yrs) INDICATORS	LTO (3-5 Yrs) INDICATORS	LONGER TO (5+ Yrs) INDICATORS	LONGEST TO (7+ Yrs) INDICATORS
6	**Build capacity to implement active living policy** at the community level and by community organizations.	Number of communities that will be reached (SART) Number of sites that will be reached (SART)	% of communities reached (SART) Number of sites where people are trained on active living policy (SART) Number of trainings provided on active living policy (SART)	ST5-8 Qualitative data re: active living policy readiness and capacity, champions, and/or partnerships (SARN)	MT6,10 Qualitative data re: active living policy that supports PA and/or improvements in community design and safety (SARN) MT6,10 Scores for active living policies, Year 2 (TBD)	LT6,MT10 Increase in scores for active living policies, Year 4 (TBD)	LT10,16,19 Sustainability plan in place for: regular policy implementation review and revision; policy improvements related to shared use streets, safety, and/or crime reduction; and/or community-wide recognition programs, e.g. *Let's Move!*, Year 5 (TBD) R7 Behavior change among adults toward increased adherence to national physical activity guidelines (BRFSS) R7 Behavior change among youth toward increased adherence to national PA guidelines (YRBSS)	R9 % of low-income adults in Arizona who are overweight and % who are obese (BRFSS) R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS)
			COALITION TRACK					
			Number of meetings with multi-sector partnerships (SART)	ST8 Scores for multi-sector partnerships, Year 1 (WCFI)	ST8 Increase in scores for multi-sector partnerships, Year 3 (WCFI)	ST8 Increase in scores for multi-sector partnerships, Year 5 (WCFI)		

Strategy Number	Description of Strategy	INTENDED REACH	PROCESS INDICATOR	STO (0-1 Yr) INDICATORS	MTO (2-3 Yrs) INDICATORS	LTO (3-5 Yrs) INDICATORS	LONGER TO (5+ Yrs) INDICATORS	LONGEST TO (7+ Yrs) INDICATORS
7	**Promote participation in and use of area physical activity resources, including partnerships** with parks and trails organizations, and other community organizations.	Number of sites that will be reached (SART)	% of sites reached (SART) % of physical activity resources assessed (SART) Number assessments completed / Number intended for assessment	ST5-8 Qualitative data re: readiness and capacity, champions, and/or partnerships related to use of area PA resources (SARN)	MT6,10 Qualitative data re: adoption of physical activity supports and/or improvements in community design and safety (SARN) MT6 Scores for PA Resources, Year 2 (PARA)	LT6,MT10 Increase in scores for PA Resources, Year 4 (PARA)	LT10,16,19 Plan in place for: sustained use of PA resources; improvements in shared use streets, safety, and/or crime reduction; and/or community-wide recognition programs, e.g. *Let's Move!*, Year 5 (TBD) R7 Behavior change among adults toward increased adherence to national physical activity guidelines (BRFSS) R7 Behavior change among youth toward increased adherence to national PA guidelines (YRBSS)	R9 % of low-income adults in Arizona who are overweight and % who are obese (BRFSS) R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS)
			SINGLE PARTNER TRACK Number of planning meetings with PA partners (SART)					
			COALITION TRACK Number of meetings with multi-sector partnerships (SART)	ST8 Scores for multi-sector partnerships, Year 1 (WCFI)	ST8 Increase in scores for multi-sector partnerships, Year 3 (WCFI)	ST8 Increase in scores for multi-sector partnerships, Year 5 (WCFI)		

Strategy Number	Description of Strategy	INTENDED REACH	PROCESS INDICATOR	STO (0-1 Yr) INDICATORS	MTO (2-3 Yrs) INDICATORS	LTO (3-5 Yrs) INDICATORS	LONGER TO (5+ Yrs) INDICATORS	LONGEST TO (7+ Yrs) INDICATORS
8	**Support family-friendly physical activity opportunities** throughout the year, throughout the community.	Number of communities that will be reached (SART)	% of communities reached (SART) Number of planning meetings with PA partners (SART)	ST5 Qualitative data re: readiness and capacity for supporting family-friendly PA opportunities (SARN) ST5 Number of people reached by PA opportunities, Year 1 (EARS) ST5 Number of physical activity opportunities provided, Year 1 (EARS)	MT6 Qualitative data related to adoption of PA supports (SARN) MT6 Increase in number of people reached by PA opportunities, Year 3 (EARS) MT6 Increase in number of physical activity opportunities provided, Year 3 (EARS)	LT6 Qualitative data related to the implementation of PA supports (SARN) LT6 Sustained increase in number of people reached by PA opportunities, Year 5 (EARS) LT6 Sustained increase in number of physical activity opportunities provided, Year 5 (EARS)	LT10 Sustainability Plan – Institutionalization of community-wide plan for sustained and ongoing PA opportunities, Year 5 (SART) R7 Behavior change among adults toward increased adherence to national physical activity guidelines (BRFSS) R7 Behavior change among youth toward increased adherence to national PA guidelines (YRBSS)	R9 % of low-income adults in Arizona who are overweight and % who are obese (BRFSS) R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS) R9 % of WIC children aged 2-5 in Arizona who are overweight and % who are obese (AzNN Data)

Strategy Number	Description of Strategy	INTENDED REACH	PROCESS INDICATOR	STO (0-1 Yr) INDICATORS	MTO (2-3 Yrs) INDICATORS	LTO (3-5 Yrs) INDICATORS	LONGER TO (5+ Yrs) INDICATORS	LONGEST TO (7+ Yrs) INDICATORS
9	**Use point-of-decision (POD) prompts** to encourage use of stairs.	Number of sites that will be reached (SART)	% of sites reached (SART) Number of meetings with site leadership (SART)	ST5 Qualitative data re: readiness and capacity for using POD prompts (SARN) ST5 % of sites that have POD prompts, Year 1 (SART)	MT6 Increase in % of sites contacted that adopt POD prompts, Year 3 (SART) MT6 Number of people reached by POD prompts, Year 3 (SART)	LT6 Increase in % of sites contacted for POD prompts that have implemented them, Year 5 (SART) LT6 Increase in number of people reached by POD prompts, Year 5 (SART)	LT10 Sustainability of POD prompts - All sites that have adopted POD prompts have a plan to keep them displayed, Year 5 (SART) R7 Behavior change among adults toward increased adherence to national physical activity guidelines (BRFSS)	R9 % of low-income adults in Arizona who are overweight and % who are obese (BRFSS)

Strategy Number	Description of Strategy	INTENDED REACH	PROCESS INDICATOR	STO (0-1 Yr) INDICATORS	MTO (2-3 Yrs) INDICATORS	LTO (3-5 Yrs) INDICATORS	LONGER TO (5+ Yrs) INDICATORS	LONGEST TO (7+ Yrs) INDICATORS
10	**Support the development, implementation, and evaluation of nutrition and physical activity LWPs** in collaboration with Local Education Agencies (LEAs).	Number of schools that will be reached (SART)	Number of meetings with school and LEA leadership (SART) % of schools/districts assessed (SART): Number assessments completed / Number intended for assessment Number of trainings and/or TA with school and LEA leadership on LWPs (SART)	ST5 District or school LWP scores, Year 1 (WellSAT 2.0) ST7 Presence and quality of DWCs and/or SHACs, Year 1 (WellSAT 2.0, IEC Number 1-2) ST5-7 Qualitative data re: LWP/LEA readiness & capacity, champions, and/or DWC/ SHAC activity (SARN)	MT5,6 Implementation scores, Year 2 (NHSAC) ST7 Presence of active SHAC, Year 2 (NHSAC, Item 1) MT5,6 Increase in LWP scores, Year 3 (WellSAT 2.0) ST7 Increase in presence and/or quality of DWCs/SHACs, Year 3 (WellSAT 2.0, IEC Number 1-2) MT5, MT6 Qualitative data re: nutrition and/or PA supports in LWPs (SARN)	LT5,6 Increase in *at least 2* implementation scores, Year 4 (NHSAC) LT5,6 Increase in LWP total scores with a comprehensive-ness grade of at least 70, Year 5 (WellSAT 2.0)	LT10 Sustainability Plan (Schools) – Achieving at least Bronze Level Best Practices, Years 6+ (NHSAC) LT10 Sustainability Plan (Districts or Schools) – LWP is comprehensive (score of 100) and strength grade has increased, Years 7+ (WellSAT 2.0) R1,2,4,5,7 Behavior change among youth toward increased adherence to national dietary and PA guidelines (YRBSS)	R9 % of low-income adults in Arizona who are overweight and % who are obese (BRFSS) R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS)

Strategy Number	Description of Strategy	INTENDED REACH	PROCESS INDICATOR	STO (0-1 Yr) INDICATORS	MTO (2-3 Yrs) INDICATORS	LTO (3-5 Yrs) INDICATORS	LONGER TO (5+ Yrs) INDICATORS	LONGEST TO (7+ Yrs) INDICATORS
11	**Improve student, teacher, and staff access to nutrition information through menu labeling and classroom curriculum** to improve student understanding of nutrition information.	Number of schools that will be reached (SART)	Number of meetings with school and LEA leadership (SART) % of schools reached that are provided TA and training on ***menu labeling and/or classroom curricula*** (SART)	ST5 Qualitative data about readiness & capacity for providing access to nutrition info through menu labeling or classroom curricula (SARN)	MT5 Qualitative data about adoption of nutrition supports for providing access to nutrition info through menu labeling or classroom curricula (SARN)		R1,2,4,5 Behavior change among youth toward increased adherence to national dietary guidelines (YRBSS)	R9 % of low-income adults in Arizona who are overweight and % who are obese (BRFSS) R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS)
			CLASSROOM CURRICULA					
			Number of train-the-trainer trainings and/or TA with teachers on ***nutrition education curricula*** (SART)		MT5 Implementation score for ***Health Education***, Year 2 (NHSAC)	LT5 Increase in ***at least two*** implementation scores for ***Health Education***, Year 4 (NHSAC)		
			MENU LABELING					
			Number of trainings and/or TA with administrators, teachers, or food service staff on ***menu labeling*** (SART)	ST5 % of schools that have nutrition info for school meals available to ***students,*** Year 1 (SART) ST5 % of schools that have nutrition info for school meals available to ***parents***, Year 1 (SART)	MT5 Increase in % of schools that have nutrition info for school meals available to ***students***, Year 3 (SART) MT5 Increase in % of schools that have nutrition infofor school meals available to ***parents***, Year 3 (SART)	LT5 Participating schools have nutrition info for school meals available to ***students AND parents***, Year 5 (SART)		
			ALSO WORKING IN STRATEGY 10					
			% of schools assessed (SART): Number assessments completed / Number contacted for assessment	ST5 LWP ***Nutrition Education*** and ***School Meals*** Scores, Year 1 (WellSAT 2.0, NE and SM Number11)	MT5 Increase in LWP ***Nutrition Education*** and ***School Meals*** Scores, Year 3 (WellSAT 2.0, NE and SM Number11)	LT5 Increase in LWP ***Nutrition Education*** and ***School Meals*** Scores, Year 5 (WellSAT 2.0, NE and SM Number11)	LT10 Mastery-level LWP scores for ***Nutrition Education*** and ***School Meals***, Years 7+ (WellSAT 2.0, NE and SM Number11)	

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12	Support **comprehensive school physical activity programming** (CSPAP).	Number of schools that will be reached (SART)	Number of meetings with school and LEA leadership (SART) % of schools assessed (SART): Number assessments completed / Number intended for assessment Number of trainings and/or TA with schools on CSPAP (SART) % of schools reached that are provided TA and training on CSPAP (SART)	ST5 Qualitative data re: readiness and capacity related to CSPAP (SARN)	MT6 Qualitative data re: adoption of PA supports (SARN) MT6 Implementation score for ***PE and Other PA***, Year 2 (NHSAC – PE/PA)	LT6 Increase in ***at least two*** implementation scores for ***PE and Other PA***, Year 4 (NHSAC – PE/PA)	LT10 Sustainability Plan – Formalized CSPAP, Years 6+ (CSPAP CDC Guide Checklist & Template) R7 Behavior change among youth toward increased PA meeting national guidelines (YRBSS)	R9 Healthy weight - % of *low-income* adults in Arizona who are overweight and % who are obese (BRFSS) R9 Healthy weight - % of low-income youth in Arizona who are overweight and % who are obese (YRBSS)
				ALSO WORKING IN STRATEGY 10				
				ST5 LWP Scores for ***PE and PA***, Year 1 (WellSAT 2.0, Section 4)	MT6 Increase in LWP Scores for ***PE and PA***, Year 3 (WellSAT 2.0, Section 4)	LT6 Increase in LWP Scores for ***PE and PA***, Year 5 (WellSAT 2.0, Section 4)		

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13	Support **development, implementation, and evaluation of food and beverage and physical activity (PA) policies and environments** consistent with the Empower standards.	Number of ECEs that will be reached (SART)	Number of meetings with ECE leadership (SART) % of ECEs assessed (SART): Number Go NAP SACCs completed / Number intended for assessment Number of trainings and/or TA with ECE staff on nutrition and PA (SART) % of ECEs reached that are provided TA and training on nutrition and increasing PA opportunities (SART)	ST5 Score for Nutrition PSEs, Year 1 (Go NAP SACC - Child Nutrition) ST5 Score for PA PSEs, Year 1 (Go NAP SACC – Infant & Child PA) ST5 Qualitative data re: readiness and capacity related to nutrition and PA policies and environments (SARN)	MT5 Increase in score ***in at least 1 area*** for Nutrition PSEs, Year 3 (Go NAP SACC – Child Nutrition) MT6 Increase in score ***in at least 1 area*** for PA PSEs, Year 3 (Go NAP SACC – Infant & Child PA) MT5 Qualitative data re: adoption of nutrition supports (SARN) MT6 Qualitative data re: adoption of PA supports (SARN)	LT5 Increase in score in ***at least two areas, including Education & Professional Development,*** for Nutrition PSEs, Year 5 (Go NAP SACC – Child Nutrition) LT6 Increase in score ***at least two areas, including Education & Professional Development,*** for PA PSEs, Year 5 (Go NAP SACC – Infant & Child PA)	LT10 Sustainability Plan – Evidence that the program or site has a formal plan for sustaining, evaluating, and improving the nutrition or PA standards or environmental changes, Years 7+ (TBD)	R1,2,4,5,7 Behavior change among youth toward increased adherence to national dietary and PA guidelines (YRBSS) R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS) R9 % of WIC children aged 2-5 in Arizona who are overweight and % who are obese (AzNN Data)

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14	**Improve capacity of child care providers and food service staff** in nutrition education and healthy meal planning and food preparation.	Number of ECEs that will be reached (SART)	Number of meetings with ECE leadership (SART) % of ECEs assessed (SART): Number Go NAP SACCs completed Number intended for assessment Number of trainings and/or TA with ECE and food service staff on nutrition education, healthy meal planning and food preparation (SART) % of ECEs reached that are provided TA and training on nutrition (SART)	ST5 Score for Nutrition PSEs, Year 1 (Go NAP SACC - Child Nutrition) ST5 Qualitative data re: readiness and capacity of ECE to offer nutrition education, health meal planning & food preparation (SARN)	MT5 Increase in score ***in at least Education & Professional Development*** for Nutrition PSEs, Year 3 (Go NAP SACC - Child Nutrition) MT5 Qualitative data re: adoption of nutrition supports (SARN)	LT5 Increase in score in ***at least two areas, including Education & Professional Development,*** for Nutrition PSEs, Year 5 (Go NAP SACC - Child Nutrition)	LT10 Sustainability Plan - Evidence that the program or site has a formal sustainability plan for nutrition, Year 7 (TBD)	R1,2,4,5 Behavior change among youth toward increased adherence to national dietary guidelines (YRBSS) R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS) R9 % of WIC children aged 2-5 in Arizona who are overweight and % who are obese (AzNN Data)

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15	**Improve capacity of child care providers to provide children with opportunities for PA throughout the day**, including outside play when possible.	Number of ECEs that will be reached (SART)	Number of meetings with ECE leadership (SART) % of ECEs assessed (SART): Number Go NAP SACCs completed / Number intended for assessment Number of trainings and/or TA with ECE staff on increasing PA (SART) % of ECEs reached that are provided TA and training on increasing PA opportunities (SART)	ST5 Baseline score for PA PSEs, Year 1 (Go NAP SACC – Infant & Child PA) ST5 Qualitative data re: readiness and capacity of the ECE for providing PA opportunities (SARN)	MT6 Increase in score in ***at least Time Provided*** for PA PSEs, Year 3 (Go NAP SACC – Infant & Child PA) MT6 Qualitative data re: adoption of PA supports (SARN)	LT6 Increase in score in ***at least Time Provided*** and ***Education & Professional Development*** for PA PSEs, Year 5 (Go NAP SACC – Infant & Child PA)	LT10 Sustainability Plan - Evidence that the program or site has a formal sustainability plan for PA, Year 7 (TBD)	R7 Behavior change among youth toward increased PA meeting national guidelines (YRBSS) R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS) R9 % of WIC children aged 2-5 in Arizona who are overweight and % who are obese (AzNN Data)

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16	Provide **evidence-based healthy eating and active living education in support of policy, system, and environmental change strategies** to eligible audiences in eligible community sites to promote consumption of healthy foods and beverages and active lifestyles.	Number of class series planned (SART)	**EVALUATION OF YOUTH DE**					R9 % of low-income youth in Arizona who are overweight and % who are obese (YRBSS) R9 % of low-income adults in Arizona who are overweight and % who are obese (BRFSS)
			% of Youth *DE series*[2] completed (SART): Number participating series completed / Number participating series planned % of participants who complete pre-post assessments (cover sheet): Number who completed pre-post surveys / Number invited to complete surveys	ST1 Increase in MyPlate *knowledge* scores, pre to post (KAN-Q) ST3 Increase in PA *knowledge* scores, pre to post (KAN-Q)	MT1 Increase in MyPlate *behaviors* scores for youth, pre to post (KAN-Q) MT3 Increase in PA *behaviors* scores for youth, pre to post (KAN-Q)	LT1,3 Behavior change among youth associated with increased adherence to national dietary and PA guidelines (YRBSS)	R1,2,4,5,7 Population-level behavior change among youth toward sustained increased adherence to national dietary and PA guidelines (YRBSS)	
			EVALUATION OF ADULT DE					
			% Adult *DE Series*[3] completed (SART) : Number participating series completed / Number participating series planned % of participants who complete pre-post assessments (cover sheet): Number who completed pre-post surveys / Number invited to complete surveys		MT1,2 Increase in MyPlate & Food Resource Management scores (UCCE Food Behavior Checklist) MT3 Increase in PA *behaviors* scores (On the Go! Survey)	LT1-3 Behavior change among adults associated with sustained increased adherence to national dietary and PA guidelines and improved food resource management (BRFSS)	R2,5,7 Population-level behavior change among adults toward sustained increased adherence to national dietary and PA guidelines and reduced food insecurity (BRFSS)	

[2] The following curricular series are approved for use with the KAN-Q, starting in FY17: Serving Up MyPlate; Kid Quest; Healthy Classrooms, Healthy Schools (10-lesson series); Nutrition Pathfinders; Nutrition Voyage (9-lesson series); CATCH Kids Club Basic Concepts Series; The Great Garden Detective

[3] The following curricular series are approved for use with the UCCE Food Behavior Checklist and/or On the Go! Surveys: MyPlate for My Family; Eat Healthy, Be Active; Eating Smart, Being Active

KEY:

Yellow = Contractor required to collect data

Green = Evaluation Team required to collect data Gray = Collected by other

ADHS agency

STO = Short-Term Outcomes

MTO = Medium-Term Outcomes

LTO = Long-Term Outcomes

SART = Semi-Annual Report Table

SARN = Semi-Annual Report Narrative

BRFSS = Behavioral Risk Factor Surveillance System

STORE= Store Opportunities in the Retail Environment Tool

WCFI = Wilder Collaboration Factors Inventory

PARA = Physical Activity Resource Assessment Instrument

SFSPC = SNAP-Ed Summer Food Service Program Supports Checklist

POD = Point of Decision

LWP = Local Wellness Policy

ECE = Early Childhood Education Center

DE = Direct Education

UCCE = University of California Cooperative Extension

YRBSS = Youth Risk Behavior Surveillance System

TBD = To be determined

NHSAC = National Healthy Schools Award Checklist, in the *Healthy Schools Program Framework of Best Practices*

KAN-Q = Kids' Nutrition and Physical Activity Questionnaire, formerly known as the AzNN Youth Survey

Appendix C: Supplemental PARA Data

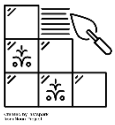
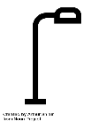
In the three tables below (AL-1 to AL-3), the purple bars represent trails (N=5).

Table AL-1. Trail Features, FFY17

Features	Percent of Trails Where Feature Is Present	Mean Score of Feature in Trails (out of 3.0)
Bike Rack 	20%	3.0
Exercise Station 	20%	3.0
Sidewalk 	20%	3.0
Trail – running/ biking 	100%	2.4

3.0 is best feature score.

Table AL-2. Trail Amenities, FFY17

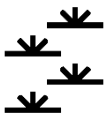
Amenities	Percent of Trails Where Amenity Is Present	Mean Score of Amenity in Trails (out of 3.0)
Access Point 	100%	2.2
Bathroom 	0%	N/A
Bench 	40%	3.0
Decorative Art 	20%	3.0
Drinking Fountain 	20%	2.0
Landscaping 	20%	3.0
Lighting 	20%	3.0

Picnic Table, Shaded		20%	3.0
Picnic Table, Not Shaded		0%	N/A
Shelter/ Ramada		20%	3.0
Shower/ Locker Room		0%	N/A
Trash Container		20%	2.0

N/A = amenity not present. 3.0 is best amenity score.

Table AL-3. Trail Incivilities, FFY17

Incivilities	Percent of Trails Where Incivility Is Present	Mean Score of Incivility in Trails (out of 3.0)
Broken glass 	20%	3.0
Dog Refuse 	20%	3.0

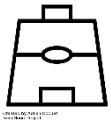
Dogs Unattended		0%	N/A
Evidence of Alcohol Use		20%	3.0
Evidence of Substance Use		0%	N/A
Graffiti		40%	2.0
Litter		60%	2.3
No Ground Covering		20%	2.0
Noisy Environment		80%	1.0
Overgrown Grass/ Weeds		20%	1.0
Sex Paraphernalia		0%	N/A

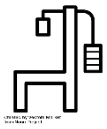
Vandalism		20%	3.0

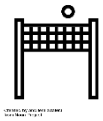
N/A = incivility not present. 3.0 is worst incivility score.

In the three tables below (AL-4 to AL-6), colors refer to the type of combination. Green bars represent combination park & community centers (N=6), pink bars represent combination park & sport facilities (N=8), and brown bars represent enhanced combination park & sport facilities (N=6), which were resources that included parks, sport facilities, and other resource types such as trails.

Table AL-4. Combination Resource Features, FFY17

Features		Percent of Combinations Where Feature Is Present	Mean Score of Feature in Combinations (out of 3.0)
Baseball Field		17%	3.0
		75%	3.0
		100%	3.0
Basketball Court		83%	2.8
		75%	3.0
		83%	2.6
Soccer Field		0%	N/A
		25%	3.0

		50%	2.3
Bike Rack		50%	3.0
		12.5%	2.0
		67%	2.0
Exercise Station		0%	N/A
		37.5%	2.3
		17%	3.0
Play Equipment		83%	2.9
		100%	2.9
		83%	3.0
Pool >3 ft deep		0%	N/A
		37.5%	3.0
		50%	3.0
Sandbox		0%	N/A
		0%	N/A
		17%	3.0
Sidewalk		100%	2.8
		100%	2.6
			2.6

		83%	
Tennis Court		0%	N/A
		37.5%	3.0
		33%	3.0
Trail – running/ biking		0%	N/A
		50%	3.0
		67%	2.5
Volleyball Court		17%	1.0
		50%	3.0
		83%	2.0
Wading Pool / Splash Pad		0%	N/A
		37.5%	3.0
		33%	3.0

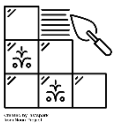
combination park & community center

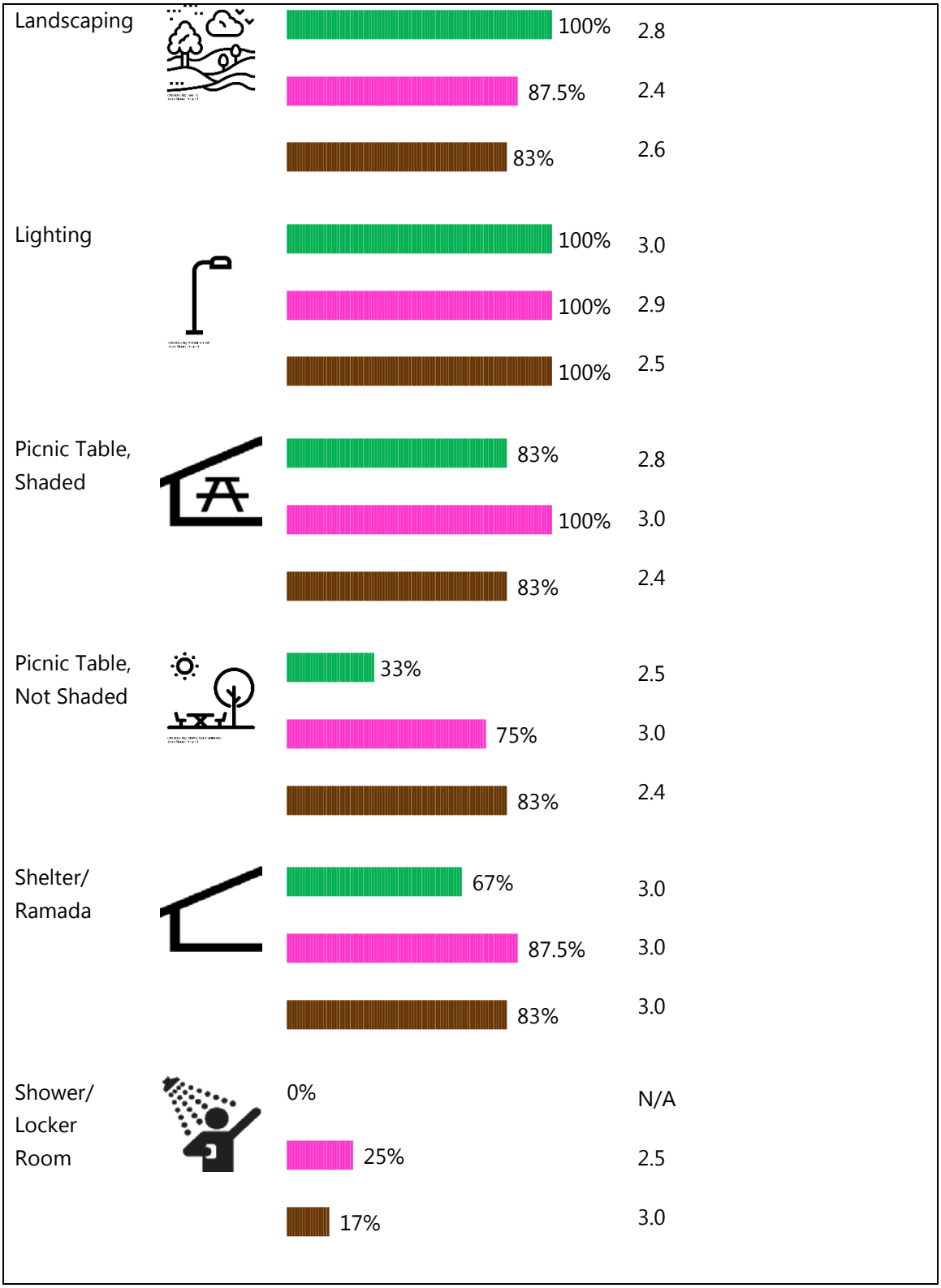
combination park & sport facility

enhanced combination park & sport facility

N/A = feature not present. 3.0 is best feature score.

Table AL-5. Combination Resource Amenities, FFY17

Amenities	Percent of Combinations Where Amenity Is Present	Mean Score of Amenity in Combinations (out of 3.0)
Access Point 	100%	2.7
	100%	2.8
	100%	2.8
Bathroom 	50%	3.0
	87.5%	2.0
	83%	2.4
Bench 	67%	2.8
	100%	2.8
	83%	2.6
Decorative Art 	17%	3.0
	0%	N/A
	33%	1.5
Drinking Fountain 	100%	3.0
	87.5%	2.6
	67%	2.0


Landscaping
100%
2.8
87.5%
2.4
83%
2.6
Lighting
100%
3.0
100%
2.9
100%
2.5
Picnic Table, Shaded
83%
2.8
100%
3.0
83%
2.4
Picnic Table, Not Shaded
33%
2.5
75%
3.0
83%
2.4
Shelter/ Ramada
67%
3.0
87.5%
3.0
83%
3.0
Shower/ Locker Room
0%
N/A
25%
2.5
17%
3.0

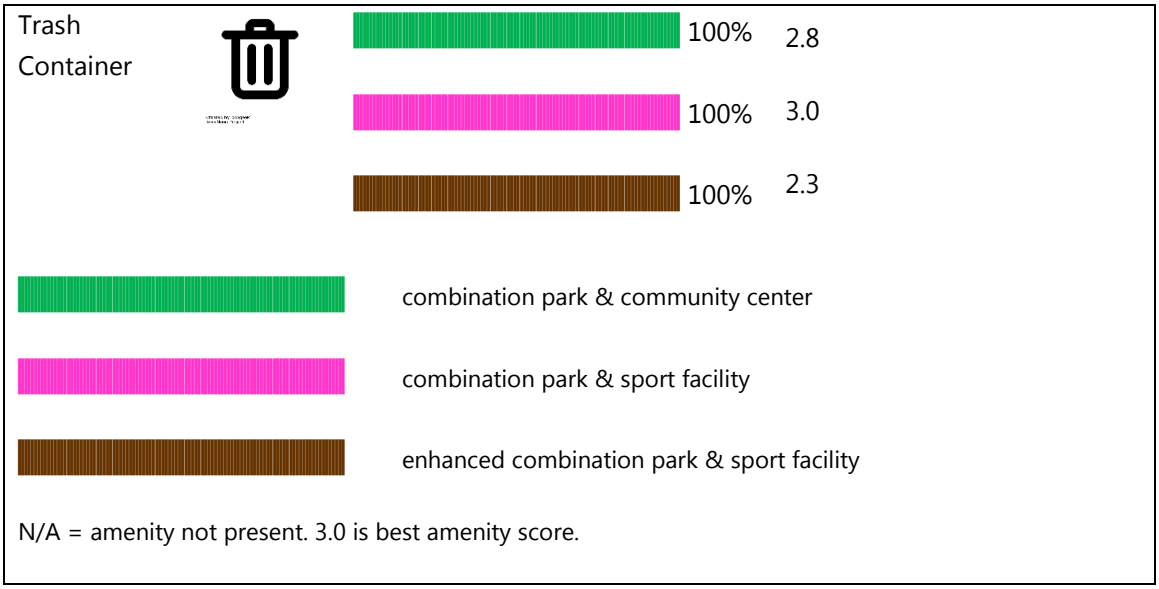
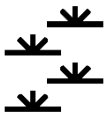
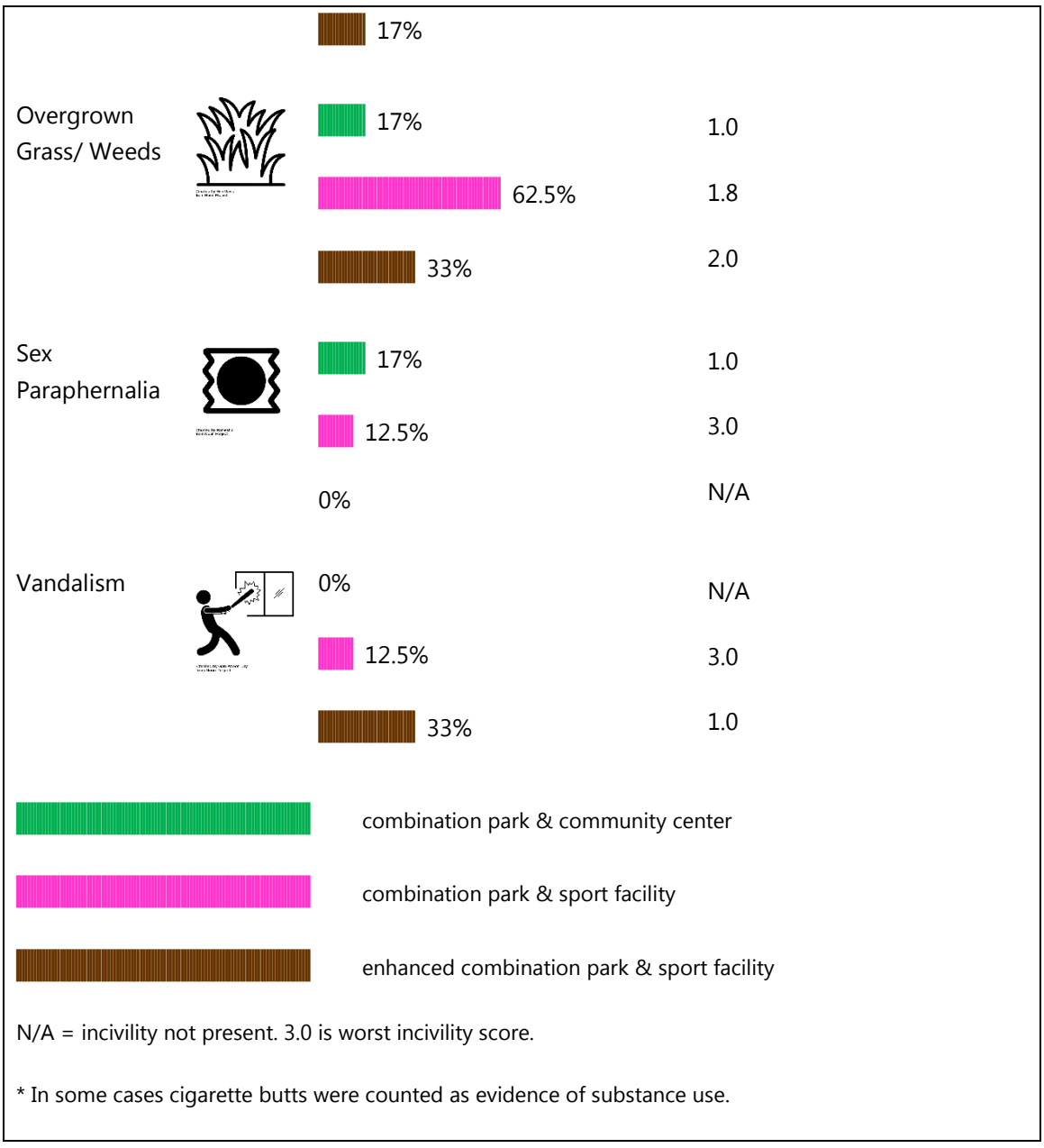


Table AL-6. Combination Resource Incivilities, FFY17

Incivilities	Percent of Combinations Where Incivility Is Present	Mean Score of Incivility in Combinations (out of 3.0)
Broken glass	17%	3.0
	37.5%	1.0
	33%	1.0
Dog Refuse	0%	N/A
	12.5%	1.0
	50%	1.0
Dogs Unattended	0%	N/A
	25%	1.0

		0%	N/A
Evidence of Alcohol Use		17%	1.0
		12.5%	3.0
		0%	N/A
Evidence of Substance Use*		0%	N/A
		12.5%	3.0
		0%	N/A
Graffiti		33%	2.0
		12.5%	1.0
		50%	1.0
Litter		83%	1.6
		75%	2.3
		83%	1.6
No Ground Covering		50%	1.0
		75%	1.3
		50%	1.3
Noisy Environment		67%	1.3
		37.5%	1.0
			1.0



N/A = incivility not present. 3.0 is worst incivility score.

* In some cases cigarette butts were counted as evidence of substance use.

Appendix D: KAN-Q SURVEY

The following is a sample of the Kids' Activity and Nutrition Questionnaire (KAN-Q). Please direct any questions regarding use of the KAN-Q to Theresa LeGros of the University of Arizona's SNAP-Ed Evaluation Team at drejza@email.arizona.edu, 520-626-8766.

Champions for Change
Arizona Nutrition Network

Kids' Activity and Nutrition Questionnaire

SAMPLE

The Arizona Nutrition Network wants to learn about what kids your age eat, and how they are active. This survey asks questions about your food choices and exercise. Your answers will help make the program the best it can be. We will ask you to take the survey at two different times. Each time, it will take you about 20 minutes.

- Taking part in this survey is up to you. Your choice will not affect your grades in school. Your choice will not affect whether you can do any school or summer activities.
- If you do not want to answer a question, you can skip it.
- You can stop taking the survey at any time.
- No one at school or at home will see your answers.
- We do not know of any risks or benefits to doing this survey.

Write your first and last name. Put one letter in each box.

First Name | Last Name

Kids' Activity and Nutrition Questionnaire

1. How old are you?
   - ○ 8
   - ○ 9
   - ○ 10
   - ○ 11
   - ○ 12
   - ○ 13
   - ○ 14
   - ○ 15

2. What grade are you in?
   - ○ 3rd
   - ○ 4th
   - ○ 5th
   - ○ 6th
   - ○ 7th
   - ○ 8th

3. Are you a boy or girl?
   - ○ Girl
   - ○ Boy

4. Yesterday, did you eat any **white** macaroni, noodles, bread, tortillas, or rice?

   - ○ **No**. I did not eat any of these foods yesterday.
   - ○ **Yes**. I ate one of these foods **1 time** yesterday.
   - ○ **Yes**. I ate one of these foods **2 times** yesterday.
   - ○ **Yes**. I ate one of these foods **3 times** yesterday.
   - ○ **Yes**. I ate one of these foods **4 times** yesterday.
   - ○ **Yes**. I ate one of these foods **5 or more times** yesterday.

5. Yesterday, did you eat any **dark or whole grain** macaroni, noodles, bread, tortillas, or rice?

   - ○ **No**. I did not eat any of these foods yesterday.
   - ○ **Yes**. I ate one of these foods **1 time** yesterday.
   - ○ **Yes**. I ate one of these foods **2 times** yesterday.
   - ○ **Yes**. I ate one of these foods **3 times** yesterday.
   - ○ **Yes**. I ate one of these foods **4 times** yesterday.
   - ○ **Yes**. I ate one of these foods **5 or more times** yesterday.

6. What type of milk do you drink **most of the time**? Choose only one. Do not use cap color to pick the type of milk you drink.

   - ○ Whole milk
   - ○ 2% reduced fat milk
   - ○ 1% (low fat) or fat free milk
   - ○ Soy, almond, rice, or other milk
   - ○ I never drink milk.
   - ○ I don't know.

SAMPLE

Kids' Activity and Nutrition Questionnaire

7. **Yesterday**, did you eat or drink any **milk, yogurt, or cheese?** You can count flavored milk, soy milk, and drinks made with yogurt.

- **No**. I did not eat any of these foods yesterday.
- **Yes**. I had milk, yogurt or cheese **1 time** yesterday.
- **Yes**. I had milk, yogurt or cheese **2 times** yesterday.
- **Yes**. I had milk, yogurt or cheese **3 times** yesterday.
- **Yes**. I had milk, yogurt or cheese **4 times** yesterday.
- **Yes**. I had milk, yogurt or cheese **5 or more times** yesterday.

8. Did you eat any vegetables **yesterday**? You **can** count mashed potatoes and beans. **Do not** count french fries or chips.

- **No**. I did not eat any vegetables yesterday.
- **Yes**. I ate vegetables **1 time** yesterday.
- Yes. I ate vegetables **2 times** yesterday.
- **Yes**. I ate vegetables **3 times** yesterday.
- **Yes**. I ate vegetables **4 times** yesterday.
- **Yes**. I ate vegetables **5 or more times** yesterday.

9. **Yesterday**, did you eat any fruit? You **can** count all fresh, frozen, canned or dried fruits. **Do not** count fruit juice.

- **No**. I did not eat any fruit.
- **Yes**. I ate fruit **1 time** yesterday.
- **Yes**. I ate fruit **2 times** yesterday.
- **Yes**. I ate fruit **3 times** yesterday.
- **Yes**. I ate fruit **4 times** yesterday.
- **Yes**. I ate fruit **5 or more times** yesterday.

10. **Yesterday** did you eat any fish, eggs, nuts or peanut butter?

- **No**. I did not eat any of these foods yesterday.
- **Yes**. I ate one of these foods **1 time** yesterday.
- Yes. I ate one of these foods **2 times** yesterday.
- **Yes**. I ate one of these foods **3 times** yesterday.
- **Yes**. I ate one of these foods **4 times** yesterday.
- **Yes**. I ate one of these foods **5 or more times** yesterday.

SAMPLE

Kids' Activity and Nutrition Questionnaire

11. **Yesterday**, did you drink any regular (not diet) soda, sports drink, juice box, or other sugary drink? **Do not count 100% fruit juice.**

- **No**. I did not drink any of these drinks yesterday.
- **Yes**. I had a drink like this **1 time** yesterday.
- **Yes**. I had a drink like this **2 times** yesterday.
- **Yes**. I had a drink like this **3 times** yesterday.
- **Yes**. I had a drink like this **4 times** yesterday.
- **Yes**. I had a drink like this **5 or more times** yesterday.

12. **Yesterday**, did you drink any water?

- **No**. I did not drink water yesterday.
- **Yes**. I drank water **1 time** yesterday.
- **Yes**. I drank water **2 times** yesterday.
- **Yes**. I drank water **3 times** yesterday.
- **Yes**. I drank water **4 times** yesterday.
- **Yes**. I drank water **5 times** yesterday.
- **Yes**. I drank water **6 times** yesterday.
- **Yes**. I drank water **7 times** yesterday.
- **Yes**. I drank water **8 or more times** yesterday.

13. How many hours did you watch TV when you were **NOT in school yesterday**?

- I did not watch TV yesterday.
- Less than one hour
- 1 hour
- 2 hours
- 3 hours
- 4 hours
- 5 hours
- 6 hours or more

14. How many hours did you use a computer, phone, or tablet or play video games when you were **NOT in school yesterday**?

- I did not use these things or play video games yesterday.
- Less than one hour
- 1 hour
- 2 hours
- 3 hours
- 4 hours
- 5 hours
- 6 hours or more

SAMPLE

Kids' Activity and Nutrition Questionnaire

15. What physical activities did you do last week? Physical activity makes your heart beat fast and makes you breathe hard. It includes PE, basketball, soccer, running around, dancing, other sports, exercise, or similar activities. *All of the kids in the pictures above are doing physical activities.*

BUBBLE IN **ALL OF THE DAYS** THAT YOU WERE ACTIVE LAST WEEK.

I was active before school on these days last week. Do *not* include team sports.

○ Monday ○ Tuesday ○ Wednesday ○ Thursday ○ Friday

I was active during recess at school on these days last week.

○ Monday ○ Tuesday ○ Wednesday ○ Thursday ○ Friday

I was active during PE at school on these days last week.

○ Monday ○ Tuesday ○ Wednesday ○ Thursday ○ Friday

I was active after school on these days last week. Do *not* include team sports.

○ Monday ○ Tuesday ○ Wednesday ○ Thursday ○ Friday

I played a team sport on these days last week.

○ Monday ○ Tuesday ○ Wednesday ○ Thursday ○ Friday

I was active during the weekend on these days last week.

○ Saturday ○ Sunday

SAMPLE

Kids' Activity and Nutrition Questionnaire

16. How much of your plate at meals should be **fruits and vegetables**?

- None
- Some
- About half
- Most
- All
- I don't know.

17. How much of the grains that most kids eat should be made with **whole grains**? *Grains* are foods like bread, cereal, rice, and noodles.

- None
- Some
- About half
- Most
- All
- I don't know.

18. What type of **milk** should most kids drink most of the time?

- Whole milk
- 2% reduced fat milk
- 1% (low fat) or fat free milk, or soy milk with added calcium
- I don't know.

19. How many minutes of **physical activity** or exercise should most kids get each day?

- 15 minutes or less
- 30 minutes
- 45 minutes
- 60 minutes (1 hour)
- I don't know.

SAMPLE

Kids' Activity and Nutrition Questionnaire

20. How do you feel about **eating fruit?**

- I really like to eat fruit
- I kind of like to eat fruit.
- I don't like to eat fruit.
- I really don't like to eat fruit.
- I'm not sure if I like to eat fruit.

21. How do you feel about **eating vegetables?**

- I really like to eat vegetables.
- I kind of like to eat vegetables.
- I don't like to eat vegetables.
- I really don't like to eat vegetables.
- I'm not sure if I like to eat vegetables.

22. How do you feel about **eating foods made with whole grains,** like brown rice or dark bread?

- I really like to eat whole grain foods.
- I kind of like to eat whole grain foods.
- I don't like to eat whole grains foods.
- I really don't like to eat whole grain foods.
- I'm not sure if I like to eat whole grain foods.

23. How do you feel about **drinking milk low in fat,** like fat free or 1% milk?

- I really like to drink low fat milk.
- I kind of like to drink low fat milk.
- I don't like to drink low fat milk.
- I really don't like to drink low fat milk.
- I'm not sure if I like to drink low fat milk.

24. How do you feel about **having drinks low in sugar,** like water or plain white milk?

- I really like drinks low in sugar.
- I kind of like drinks low in sugar.
- I don't like drinks low in sugar.
- I really don't like drinks low in sugar.
- I'm not sure if I like drinks low in sugar.

25. How do you feel about **doing physical activity?**

- I really like to do physical activity.
- I kind of like to do physical activity.
- I don't like to do physical activity.
- I really don't like to do physical activity.
- I'm not sure if I like to do physical activity.

SAMPLE

Champions for Change
Arizona Nutrition Network

Kids' Activity and Nutrition Questionnaire

SAMPLE

Information for Adults

This material was funded by USDA's Supplemental Nutrition Assistance Program – SNAP through the Arizona Nutrition Network. This institution is an equal opportunity provider. AzNN-2017

More information about the KAN-Q may be found in the following publication: LeGros TA, Hartz VL, Jacobs LE. Reliability of a Kid's Activity and Nutrition Questionnaire for School-Based SNAP-ED Interventions as Part of a Tiered Development Process. *Journal of Nutrition Education and Behavior*. 2017; 49:125-129

Contact Information: Arizona Nutrition Network 602-542-1686.

May 2017